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Effects of Short-Term Intermittent Air Pollutants on Incidence and Severity of Acute Respiratory Disease
Data Collection and Quality Assurance

Del Green Associates, Inc.
San Diego, CA

Prepared for

Health Effects Research Lab.
Research Trianlge Park, NC

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Effects of Short-Term Intermittent Air Pollutants on Incidence and Severity of Acute Respiratory Disease: Data Collection and Quality Assurance,

1981

R. David Flesh, Margaret L. Riha, and Michelle F. Miller.

PERFORMER: Green (Del) Associates, Inc., San Diego, CA.
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The purpose of this study was to measure the acute response of respiratory disease from peak hourly and daily average exposures to nitrogen dioxide alone and in combination with other pollutants. The study population was made up of families with children attending public elementary schools and living in four California South Coast Air Basin study areas: West Los Angeles/Santa Monica, Garden Grove/Westminster, Glendora/Covina, and Upland/Ontario. The role and responsibility of the contractor were to collect all background and health data, to process and assure the quality of the data, and to prepare this report. Families were recruited for participation during the spring and summer months of 1978. Recruitment included face-to-face interviews for the purpose of collecting family background data. Over 3,000 families were interviewed. From these, 1,402 families (about 350 per study area) were selected.

KEYWORDS: *Respiratory diseases, *Toxicology, *Air pollution effects(Humans), *Toxic substances, *Health surveys.

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ABSTRACT

The purpose of this study was to measure the acute response of respiratory disease from peak hourly and daily average exposures to nitrogen dioxide alone and in combination with other pollutants. The study population was made up of families with children attending public elementary schools and living in four California South Coast Air Basin study areas: West Los Angeles/ Santa Monica, Garden Grove/Westminster, Glendora/Covina, and Upland/Ontario.

The role and responsibility of the contractor were to collect all background and health data, to process and assure the quality of the data, and to prepare this report.

Families were recruited for participation during the spring and summer months of 1978. Recruitment included face-to-face interviews for the purpose of collecting family background data. Over 3,000 families were interviewed. From these, 1,402 families (about 350 per study area) were selected.

Participation required that the families record daily the disease symptoms that they experienced. According to instructions mailed to them, the symptoms were to be recorded on a specially prepared calendar. Each week, the symptoms recorded the previous week were given by telephone to a staff of trained interviewers employed by the contractor. Symptom surveillance and the weekly telephone interviewing continued for 26 weeks, beginning in September 1978 and ending in March 1979.

The background and symptom data were reviewed and edited in the field and in the contractor's main offices prior to data entry. Computer files of the background and symptom data were prepared in three steps. First, the data were transferred from the background and symptom questionnaires to magnetic tapes through the use of an optical reader. Second, supplementary information including updates to the background data and doctors' diagnoses of illnesses reported during symptom surveillance were key taped into a separate computer file. Third, quality assurance procedures were used to minimize error in the computer files. Maximum allowable error was set at 2%. The computer files and all questionnaires were then sent to the EPA for analysis.

EPA-600/1-81-065

PB82-129479

EFFECTS OF SHORT-TERM INTERMITTENT AIR POLLUTANTS ON INCIDENCE AND SEVERITY OF ACUTE RESPIRATORY DISEASE

Data Collection and Quality Assurance

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FOREWORD

The many benefits of our modern, developing, industrial society are accompanied by certain hazards. Careful assessment of the relative risk of existing and new manmade environmental hazards is necessary for the establishment of sound regulatory policy. These regulations serve to enhance the quality of our environment in order to promote the public health and welfare and the productive capacity of our Nation's population.

The Health Effects Research Laboratory, Research Triangle Park, conducts a coordinated environmental health research program in toxicology, epidemiology, and clinical studies using human volunteer subjects. These studies address problems in air pollution, nonionizing radiation, environmental carcinogenesis and the toxicology of pesticides as well as other chemical pollutants. The Laboratory participates in the development and revision of air quality criteria documents on pollutants for which national ambient air quality standards exist or are proposed, provides the data for registration of new pesticides or proposed suspension of those already in use, conducts research on hazardous and toxic materials, and is primarily responsible for providing the health basis for nonionizing radiation standards. Direct support to the regulatory function of the Agency is provided in the form of expert testimony and preparation of affidavits as well as expert advice to the Administrator to assure the adequacy of health care and surveillance of persons having suffered imminent and substantial endangerment of their health.

The purpose of this study was to measure the acute response of respiratory disease from peak hourly and daily average exposures to nitrogen dioxide alone and in combination with other pollutants. This report is in fulfillment of EPA contract number 68-02-2749.

F. Gordon Hueter, Director
Health Effects Research Laboratory

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ACKNOWLEDGEMENTS

Del Green Associates, Inc. (DGA) is grateful to the many private citizens of the communities of Los Angeles, Santa Monica, Garden Grove, Westminster, Glendora, Covina, Upland, and Ontario, California who gave generously of their time by voluntarily participating in this study. Without their cooperation, the study would not have been possible.

Contract No. 68-02-2749 was originally awarded to Copley International Corporation. The data collection activities were conducted by the Copley organization, with the assistance of the Statewide Air Pollution Research Center at the University of California, Riverside (UCR). In March 1980, the Environmental Sciences Division of Copley International Corporation was sold to Del Green Associates, Inc. (DGA) and the responsibility for completing Contract No. 68-02-2749 was transferred to DGA. The principal responsibility of DGA was to conduct quality assurance testing of the data files. The data files were prepared using a DEC system-10 computer operated by Copley Computer Services.

The overall responsibility of the study was undertaken by R. David Flesh, formerly with Copley International Corporation and now with Del Green Associates, Inc. During data collection, he was assisted by Dr. C. Ray Thompson and Joanne R. Hersey of UCR and Joyce G. Revlett and Nancy L. Ternullo of Copley. During the quality assurance task he was assisted by Margaret L. Riha and Michelle F. Miller of DGA. The manuscript was typed under the direction of Patricia A. Irwin, also of DGA.

SECTION 1

INTRODUCTION

The purpose of this study was to measure the acute response of respiratory disease from peak hourly and daily average exposure to nitrogen dioxide (NO_2) alone and in combination with other pollutants. The study took into consideration mobility patterns with hope to provide better bases for future estimates of individual exposure.

The study population was made up of families with children attending public elementary schools and living in four California South Coast Air Basin study areas: West Los Angeles/Santa Monica, Garden Grove/Westminster, Glendora/Covina, and Upland/Ontario. The contractor obtained lists of these families from school districts serving the study area.

The role and responsibility of the contractor were to collect all background and health data, to process and assure the quality of the data, and to prepare a final report on these activities before transmitting the data to the Environmental Protection Agency (EPA). The collection of background and health data was completed in March 1979. The contractor was assisted by the Statewide Air Pollution Research Center at the University of California, Riverside (UCR), in the data collection tasks. The data and reports from the study will be used by the EPA as one of several inputs for developing regulatory strategies for short-term exposure to NO_2.

Six sections in this report are devoted to data collection. Each section represents a discreet task.

- Delineating the study areas. The work was done in December 1977 and January 1978.
- Obtaining school district approval. This task began in February 1978 and was completed by the end of April.
- Background survey interviewing. Fourteen hundred families were selected to participate in the symptom surveillance based on the results of the background survey which began in late May 1978 and was concluded in early August of that year.
- Selecting families for participation. Specific criteria were used to determine the eligibility of families for participation in symptom surveillance.
- Weekly telephone interviewing. The families kept daily records of respiratory disease symptoms and other symptoms they experienced.

This work continued for 26 weeks, beginning in September 1978 and ending in March 1979.

- Concluding the data collection activities.

Quality assurance is covered in one section.

- Assuring the accuracy of the data files.

The appendix to this report contains copies of the correspondence to families, the background and symptom (ARD surveillance) questionnaires, instructions to interviewers, and other materials that were used during the course of the study.

SECTION 2

DELINEATING THE STUDY AREAS

This section is divided into two parts. The first describes the location of sites for additional air monitoring and expansion of the study area boundaries. The second part covers the division of the study areas into zones for interviewing control purposes.

Location of Sites for Additional Air Monitoring

Four study areas had been tentatively chosen by the EPA for this study in 1976. The Agency had erected an air monitoring station in each area and had been monitoring the air in the areas for months before this study was initiated.

In December 1977, the EPA indicated an interest in placing a second air monitoring station in each of the study areas. The main purpose of installing a second station was to permit better characterization of air pollution exposure of families enrolled in the study. An added benefit of having a second station was to expand the portion of each area in which families could be interviewed. The EPA's study protocol stated that the health data must be collected within two miles of an air monitoring station. By expanding the portion of the area in which interviewing could be conducted, it was possible to increase the likelihood that a sufficient number of eligible families could be found and recruited for participation.

A criterion placed on the locations of the second stations was that they be located no more than two miles from the existing EPA air monitoring stations. An additional criterion stated that the 2-mile area around the new station must be socioeconomically comparable to the 2-mile area around the existing station. Several steps were taken to satisfy these criteria. First, the locations of the existing air monitoring stations were plotted on maps and circles of a 2-mile radius were drawn around them. Second, the following data were taken or computed from the 1970 U.S. Censuses of Population and Housing for all census tracts falling within the 2-mile circles:

- Percent of children 14 years or younger in total population.
- Number of husband-wife families with own children under 18 years.
- Number of children in husband-wife families.
- Median age.
- Percent nonminority white.

- Median value of owner occupied single family units.
- Percent single family units in total units.

The results provided a profile of selected socioeconomic characteristics in the existing study areas (i.e., within two miles of the existing air monitoring stations).

Next, circles of a 4-mile radius were drawn around the plots of the existing air monitoring stations. These circles described the approximate outer edges of the expanded study areas. The same data items as listed above were taken or computed from the U.S. Census publications for all census tracts falling between the 2- and 4-mile circles. The Census statistics are given in Appendix A, Tables A1 through A4. The maps and tabulated census tract information were used to identify all possible locations (mostly parks and school yards) for the additional air monitoring facilities. The Project Director travelled to each location and investigated the willingness of the organization in charge of the land to permit a temporary installation of an air monitoring facility, the access to the land, the possibility of securing the facility against theft and vandalism, and the availability of electrical power. Based on these investigations, the Project Director developed the following set of preferred sites, all of which were accepted by the EPA.

- West Los Angeles: Mar Vista School
- Garden Grove: Hill School
- Glendora: Sunflower School
- Upland: Citrus School

Appendix A, Figures A1 through A4, show the recommended sites and corresponding expanded study areas. Certain Census tracts were eliminated from the tables and excluded from the study because they did not meet the median family income ($10,000 to $20,000) and percent nonminority white ($\geq$ 90%) selection criteria used to assure that each study area was as homogeneous as possible.

Median family income of the remaining census tracts was combined and weighted by number of families to test the comparability of the study areas in terms of the income statistic. The results were as follows:

	Upland	Glendora	West L.A.	Garden Grove
Existing Study Area	$12,697	$13,300	$14,591	$11,707
Total Study Area	$12,135	$12,688	$13,317	$11,769

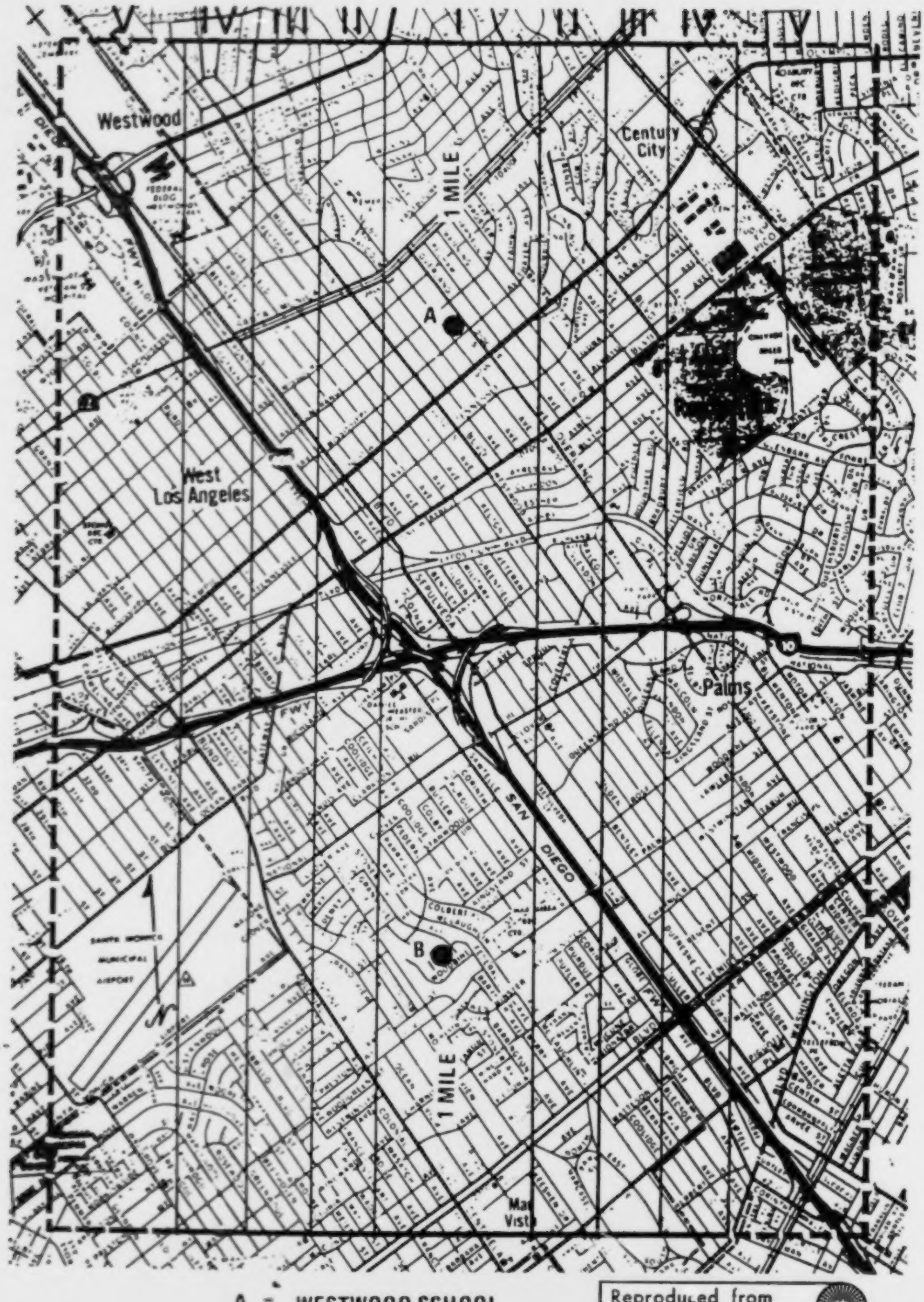
Clearly, the comparability of the study areas was improved when the expanded areas were combined with the existing areas in each community. Overall difference in median family income between study areas was reduced from almost 25 percent to less than 12 percent when the study areas were expanded.

The final shape of the study areas was not a figure "8" as shown in Appendix A. Instead, the EPA decided to substitute smaller rectangular areas, each measuring two miles by four miles. This was done to improve the estimates of human exposure developed from the data obtained by the air monitoring stations in the study areas and to facilitate the recruitment of families. The result of the change was to reduce the size of the study areas from almost 20 square miles to 8 square miles. After reviewing the Census data described earlier, it was expected that enough families with children in elementary school could be recruited in the smaller rectangular areas to satisfy the needs of the study. The air monitoring stations were situated in the study areas as shown in Figure 1 through 4. The locations of the stations are shown by dots labelled "A" and "B".

Division of Study Areas into Zones

The study protocol specified that each of the expanded study areas be divided into zones which are located at certain distances from the air monitoring stations in order to facilitate systematic interviewing. Figures 1 through 4 show the study areas as they were divided into five interviewing zones which extended out from the air monitoring station. (Zone I consisted of the ½-mile strip down the center of the map. Zone II consisted of the ¼-mile strips on each side of Zone I. Zones III, IV, and V can be seen by reference to the Roman numerals along the top of the map.) The areas were divided into interviewing zones so that the addresses of elementary school families residing in the areas could be plotted on the maps and an orderly schedule of interviewing could be established.

WEST LOS ANGELES



A = WESTWOOD SCHOOL

B = MAR VISTA SCHOOL

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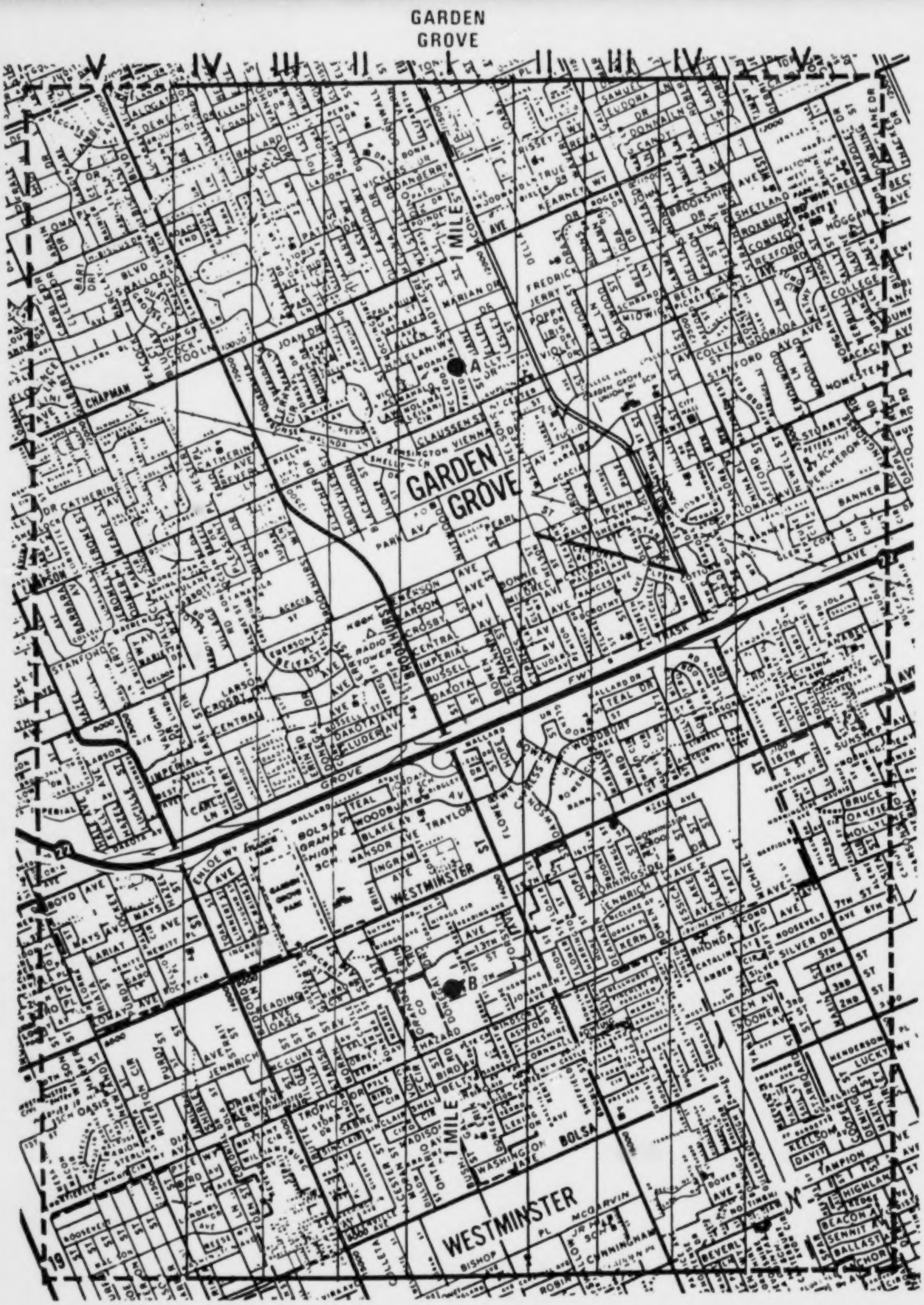
Figure 1: WEST LOS ANGELES AIR MONITORING STATION LOCATIONS

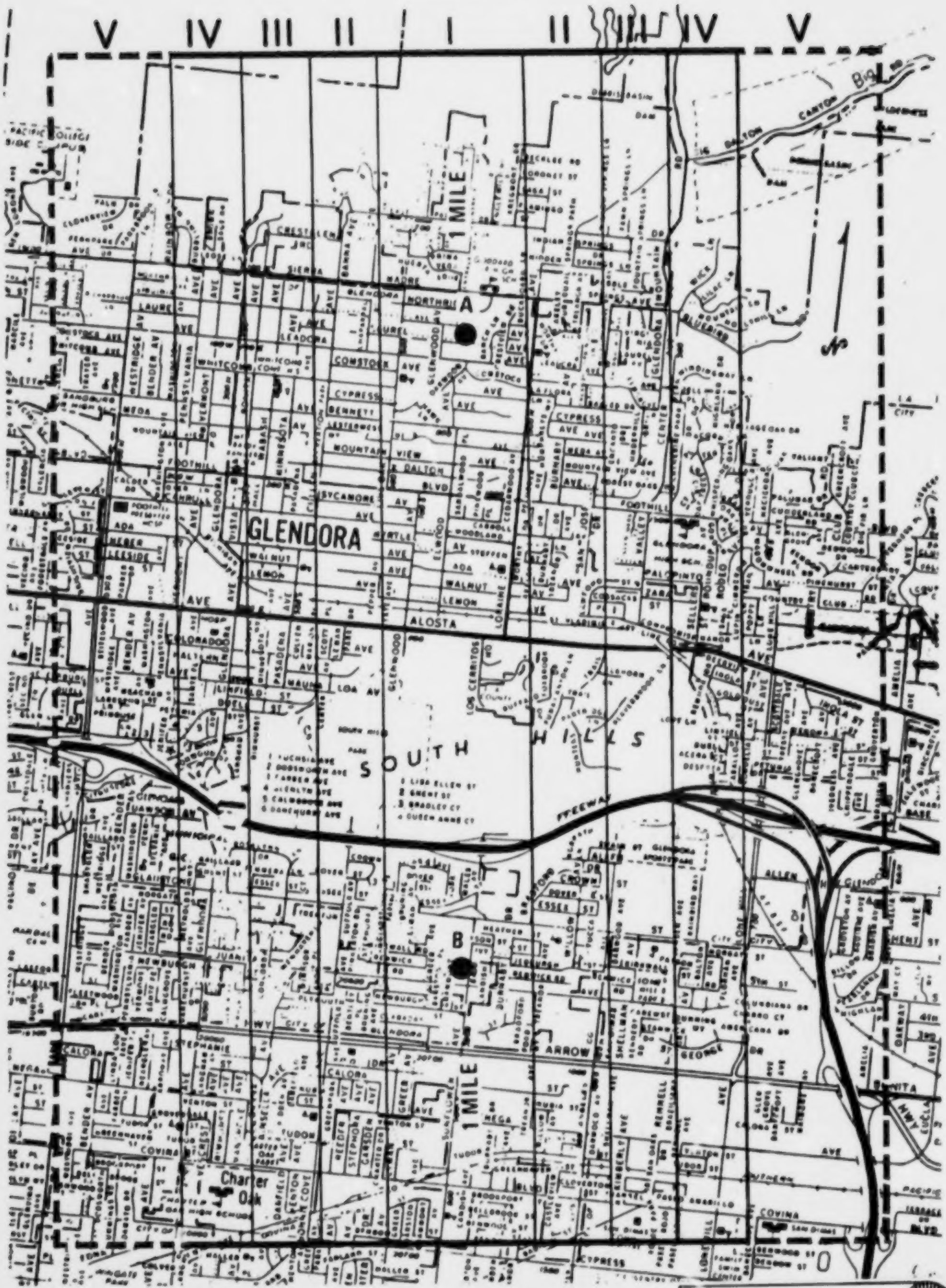


A = EVANS SCHOOL

B = HILL SCHOOL

Figure 2: GARDEN GROVE AIR MONITORING STATION LOCATIONS

GLENDORA



A = LEADORA AT DALTON WASH

B = SUNFLOWER ELEMENTARY SCHOOL

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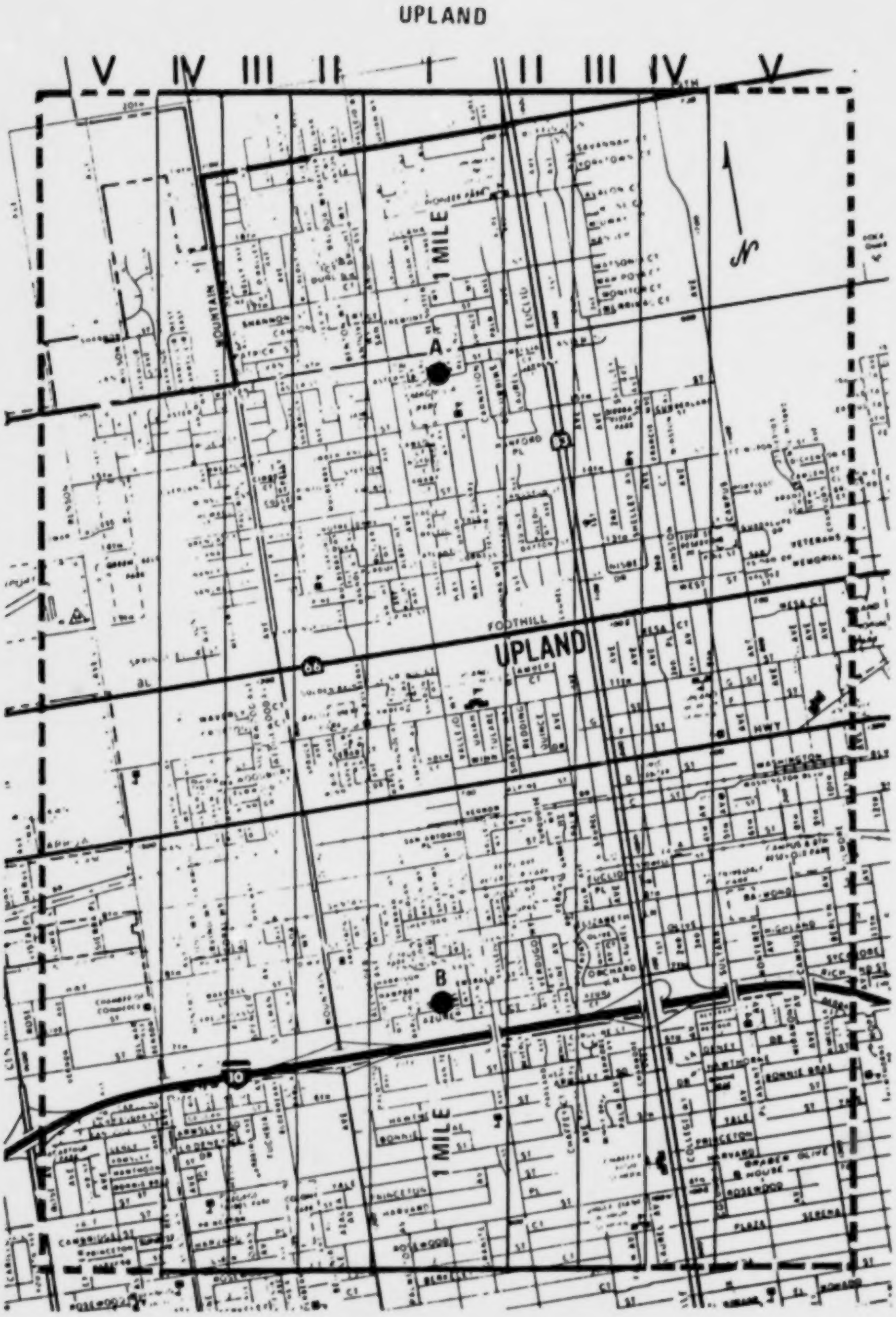
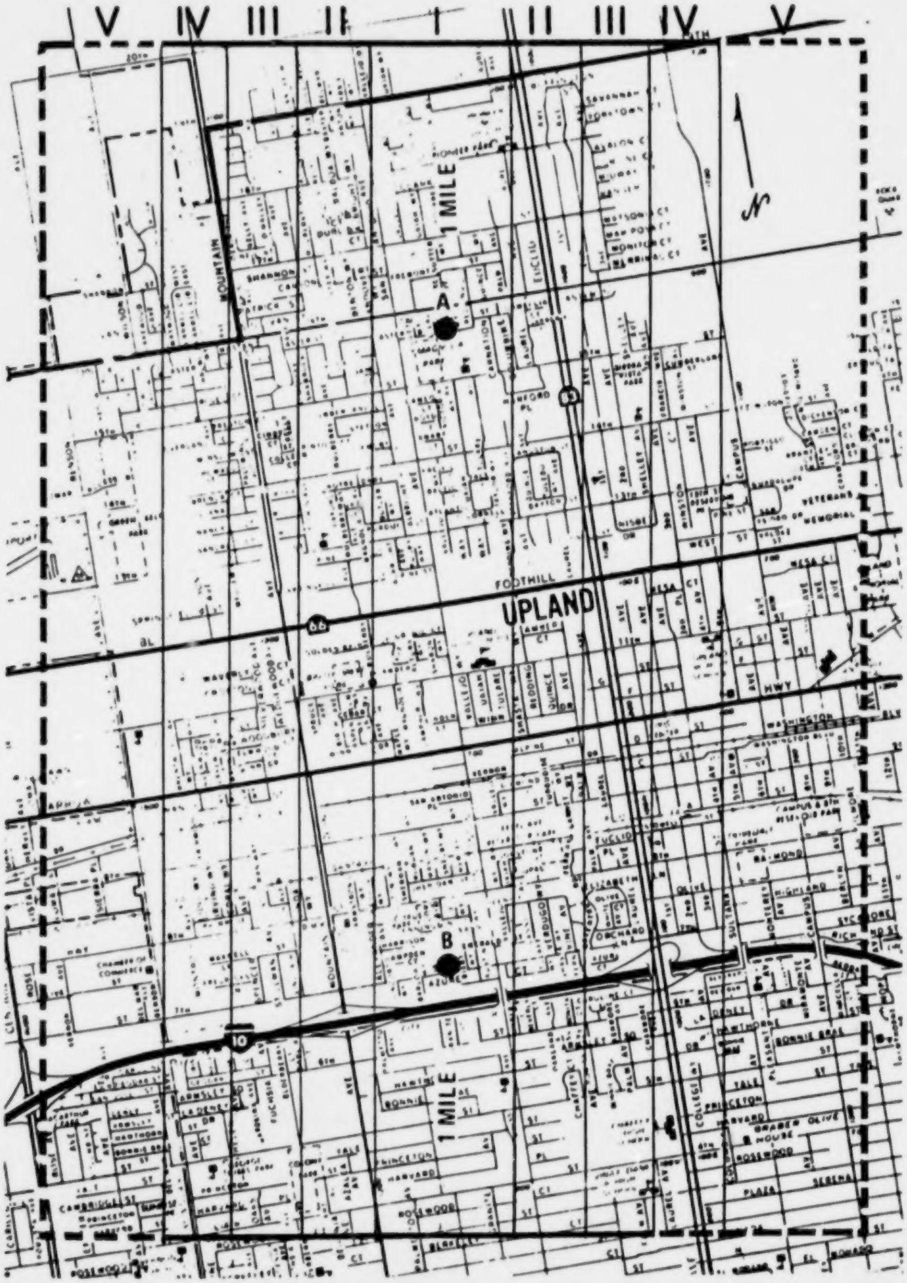
Figure 3: GLENDORA AIR MONITORING STATION LOCATIONS



A = MAGNOLIA SCHOOL
B = CITRUS SCHOOL

Figure 4: UPLAND AIR MONITORING STATION LOCATIONS

UPLAND



A = MAGNOLIA SCHOOL

B = CITRUS SCHOOL

Figure 4: UPLAND AIR MONITORING STATION LOCATIONS

SECTION 3

OBTAINING SCHOOL DISTRICT APPROVAL

Beginning in February 1978, the Project Director visited the school districts which had jurisdiction over the schools in all four study areas. School district approval was necessary in order to obtain lists of families living in those school districts. Considerable difficulty was met in trying to obtain school district approval because of restrictions placed on the release of information by federal and State privacy laws. Under these laws, each school district is permitted to prepare guidelines which must be at least as restrictive as the federal and State laws require. School district guidelines can be even more restrictive depending upon the desires of the individual school boards. Consequently, the guidelines of some school districts were found to be more restrictive than others. The most restrictive guidelines being followed in the study areas were those of the Charter Oak Unified School District. After the Charter Oak Board of Education voted to give out family names, addresses, and telephone numbers, it was necessary for the School District to inform all families with children attending their schools that such information would be given to a research organization conducting studies which may benefit the health, education, and/or welfare of their children.

By the end of April 1978, approval had been obtained to receive lists of families from the following school districts:

- West Los Angeles:
  - Los Angeles City Unified School District
  - Santa Monica Unified School District
- Garden Grove:
  - Garden Grove Unified School District
- Glendora:
  - Glendora Unified School District
  - Charter Oak Unified School District (Covina)
- Upland:
  - Upland Unified School District
  - Ontario/Montclair Unified School District

Of eight school districts contacted, the Westminster Unified School District in the Garden Grove study community was the only district which, upon vote of the Board of Education, did not agree to participate in the study.

Once permission was granted by the school districts, the lists of families were provided promptly. The school personnel were entirely cooperative. Apparently, there were no complaints on the part of the families about the schools releasing their names.

SECTION 4

BACKGROUND SURVEY INTERVIEWING

This section is presented in four parts. The first part covers pre-survey activities. Part two describes the recruitment and training of the survey interviewers. Part three gives the details of the interviewing. The fourth part describes the quality assurance step of validating the interviews.

Preliminary Activities

After approval was granted by the school districts, lists of student and/or family names and addresses were sent to the contractor by some of the school districts, while members of the contractor's clerical staff were sent to other districts to copy the needed information. Using EPA-supplied maps, the contractor's clerical staff listed the streets and street number limits which fell into each zone, making proper zone assignment of each address an easy task. As each school family address was pinpointed, it was typed onto an index card. The completed cards were then delivered to the contractor's field supervisors.

Different colored index cards were used for each zone according to the following color scheme:

- Zone I - pink
- Zone II - green
- Zone III - yellow
- Zone IV - blue
- Zone V - salmon

The index cards were separated according to study area and zone. The field supervisors divided the zones in each study area into two separate categories: (1) those addresses which were known to be multiple family dwellings, and (2) the remaining addresses. Addresses were randomly sampled in each zone according to the following scheme:

For a given zone, the study area with the lowest number of multiple family units determined the number of multiple family dwellings to be interviewed in all four areas. For example, if Zone I, West Los Angeles had the least number of multiple family dwellings of the four areas, then that number of multiple family addresses would be randomly chosen from Zone I in each of the other three study areas. The same procedure was used for the other category of remaining addresses. The zone sample size was, therefore, the sum of the lowest number of multiple family dwellings and the lowest number of remaining addresses making the zone sample size the same for all four study areas. This technique resulted in an initial sample size of 1,294 homes in each study area.

Once the zone sample was chosen, a copy was made of each index card on xerox paper that was also color-coded accoring to zone. In this way, the copy of the card could go to the interviewer, while the original card remained in the field office. This prevented the loss of index cards and eliminated the likelihood of impacting the randomness of the sample by having to select additional addresses to replace the addresses on lost cards.

In February 1978, a subcontract was signed with the Statewide Air Pollution Research Center at the University of California, Riverside, thereby establishing a data collection field office at the facility. Under the terms of the subcontract, UCR was to employ an equal number of interviewing personnel as the prime contractor in order to match the prime contractor's interviewing and surveillance effort in the four study areas.

In May 1978, a field office was established in the Garden Grove area to serve as a storage facility for questionnaires and other study materials and, later, as a facility in which the weekly telephoning was conducted.

Recruitment and Training of Survey Interviewers

Recruitment of interviewers took place during March and April 1978. In addition to the field supervisors, the prime contractor and subcontractor each recruited two team leaders, ten team members (five for each team) and several alternate team members. Many of these people had served as interviewers on previous EPA studies and, therefore, were very experienced in surveys of this type.

Each of the interviewers obtained business licenses and solicitors' permits in all of the study areas that required them.

An interviewer training session was held in May 1978. During the week before the training session, the team leaders pretested the questionnaire by conducting interviews with school families who lived just outside of the four study areas. Three to five interviews were completed in each locality. In addition to pretesting the questionnaire, the team leaders attempted to identify potential problems which might be encountered during actual interviewing.

The training session was held on May 18 and 19 at the Garden Grove Unified School District headquarters. All interviewers, alternates, team leaders, and field supervisors were in attendance as well as the Project Director, and other members of the prime contractor's and subcontractor's professional staffs. The EPA Project Officer and a senior research epidemiologist were in attendance, representing the EPA Health Effects Research Laboratory in Research Triangle Park, North Carolina. A copy of the training session agenda is included in Appendix B (see ARD Study Interviewers' Instructions).

The training session began with a presentation given by the Project Director on the proper techniques of interviewing in studies of scientific concern. Following this, the interviewers were given ARD Study Interviewers' Instructions, which contained information on the background and purpose of the study, a sheet of questions and answers about the study that the interviewers were to use when they contacted the school families for interviews, an interviewing schedule, and maps of the study areas (see Appendix B).

Each interviewer was given a copy of the ARD Study Background Questionnaire and an EPA prepared manual entitled, "Instructions for Administering the ARD Study Background Questionnaire." (A copy of the Questionnaire and the instruction manual are presented in Appendix C). Using this manual, the senior research epidemiologist led a detailed question-by-question discussion of the proper administration of the questionnaire, allowing interviewers the opportunity to ask questions. Following this, the results of the pretest were discussed by the field supervisors.

Upon completion of the formal presentations, the interviewers practiced administering the questionnaire to each other. Sample interviews were presented and critiqued, and then actual interviews were practiced in the field. Zone V in Garden Grove was the chosen location of these initial interviews, since Zone V was not to be canvassed in any of the study areas unless the necessary number of panel families could not be enrolled from Zones I through IV. The training session ended with a review of the results of the interviews conducted in Zone V and a discussion of any additional questions that the interviewers had.

Survey Interviewing

The survey began in West Los Angeles on May 22, 1978, the first work day following the training session. The interviewers were given their first day's supply of blank questionnaires, doctor's diagnosis forms (see Appendix D), color-coded sheets giving the addresses of the families in Zone I of West Los Angeles to which they were assigned. Also provided to the interviewers were pads of Questionnaire Information Sheets, a copy of which was to be completed for each interview attempted (see Appendix D), and Interviewer Summary Sheets, one of which was to completed at the end of each survey day (see Appendix D).

The interviewers met with their team leaders late in the afternoon, giving them the questionnaires they completed that day and the address sheets. During this meeting they received a new supply of blank questionnaires and address sheets for the study area and zone where interviews were to be conducted the next day. In each study area, interviewers were assigned first in Zone I, then in Zone II, then in Zone III, and finally in Zone IV.

Families who could not be contacted on a previous visit were reassigned to the interviewers. Every day the interviewers would first attempt to make callbacks in previous zones before making contacts with families in newly assigned zones. The schedule for contacting any given family for a background interview was as follows:

- 1st attempt - between 8 a.m. and 5 p.m., any weekday
- 2nd attempt - in afternoon (1 p.m. to 5 p.m.) if 1st attempt was in the morning (8 a.m. to 12 p.m.) or vice versa. This attempt should be on a day of the week other than that of the first call.
- 3rd attempt - any week day and hour between 8 a.m. and 5 p.m. but the hour and day of week must differ from attempts 1 and 2.
- 4th attempt - in the afternoon if the 3rd attempt was in the morning or vice versa, but a different hour and day of week from the previous attempts.
- 5th attempt - during evening hours, 5 p.m. to 8 p.m.
- 6th attempt - Saturday or Sunday.

If a neighbor or other knowledgeable person said both husband and wife worked and were home only during the evenings, attempts 2 through 4 were skipped and attempt 5 was used for an evening call.

The schedule for contacting a family was developed to minimize the need for weekend interviewing. On the occasions when Saturday interviewing was necessary, the team leaders pooled all families that had to be interviewed and made appropriate Saturday assignments. The first day of Saturday interviewing was June 17. A copy of the survey interviewing schedule is included in the ARD Study Interviewers' Instructions (see Appendix B).

Interviewing was rotated from study area to study area to avoid day of the week effects and to maximize the chances of finding the families at home. A "round" of interviewing was said to have been completed after each four days of the survey. A record of each round of interviewing results was maintained by the field supervisors in the form of a Weekly Report of Recruitment Interviewing (see Appendix D). At the end of each round of interviewing, the report was combined for the two interviewing teams and forwarded to the EPA Project Officer as an indication of the progress being made. The final round (Round 12) of interviewing ended on August 1.

During the course of the survey, the interviewers discovered that West Los Angeles households were harder to contact and the respondents were much less trusting of solicitors than in the other communities. Therefore, additional visits were made to West Los Angeles for a few days after August 1 in and attempt to increase the number of interviews completed in that study area. Table 1 shows the total number of interviews completed in each of the study areas during the 12 rounds of interviewing.

Table 1

TOTAL NUMBER OF ARD BACKGROUND INTERVIEWS COMPLETED, BY STUDY AREA

Study Area	Number of Background Interviews Completed By Families Meeting Selection Criteria*	By Families Not Meeting Selection Criteria*	Total
West Los Angeles/Santa Monica	474	266	740
Garden Grove/Westminster	512	242	754
Glendora/Covina	553	271	824
Upland/Ontario	537	305	842
Total	2,076	1,084	3,160

*The selection criteria are explained in Section 5.

Validation of Interviews

Telephone validation of 10 percent of the interviews completed by each interviewer was conducted through Round 12 by noninterviewing personnel, using Instruction for Conducting ARD Background Questionnaire Validation (see Appendix D). The results of the validations were recorded on ARD Questionnaire Validation Sheets (see Appendix D). A total of 316 validation interviews were conducted. The results of only 15 of these interviews differed from the initial interviews. The differences were not associated with the work of any particular interviewer or survey team, but appeared to be spread nonsystematically among the team members.

SECTION 5

SELECTING FAMILIES FOR PARTICIPATION

This section is divided into two parts. The first part describes the criteria used for determining the eligibility of families to participate. The second part describes the application of those criteria and the final choice of 1,400 families.

Determination of Eligibility

As the face-to-face interviews of families progressed through the 12 rounds, the questionnaires were edited for completeness and inconsistencies. The answers given were checked to determine eligibility, also. Five criteria, developed by the EPA, had to be met for families to qualify for participation:

1. Have access to a working telephone.
2. Have lived in the study area for one or more years.
3. Do not plan to move within 12 months.
4. Agree to participate in the weekly telephone surveillance.
5. Have one or more elementary school children living in the home.

As the responses of the families were examined for eligibility, special 2-digit codes were written on the Background Questionnaires. The codes established the priority of each family in the selection process. Initially, priority for selection was to take the following factors into consideration:

- Presence of preschool children in the family.
- Length of residence in the study area:
    1. Three or more years
    2. One to three years
- Parents living in the home:
    1. Both parents
    2. Female parent
    3. Male parent
- Type of fuel used for cooking:

   1. Gas
   2. Electricity

- Type of air conditioning in the home:
   1. Central
   2. Room
   3. None

- Type of dwelling unit:
   1. Single Family
   2. Multifamily

- Presence of older family members (e.g., grandparents) living in the home.

It was planned that the study areas would be matched in terms of these factors as well as in terms of the socioeconomic characteristics discussed in Section 2. As the responses to the Background Questionnaires were being coded, it quickly became clear that the study areas could not be completely matched and that all of the factors could not be accomodated if the selection process was to yield the quota of at least 350 families in each study area. Therefore, a decision was made by the EPA to use 80% of the families who cook with gas and 20% of the families who cook with electricity in each study area where this combination was possible (in West Los Angeles, Garden Grove, and Glendora) and a 50%:50% ratio of gas to electricity where the 80%:20% ratio was not possible (in Upland). The EPA also decided that 2-parent families with no preschoolers, living in single family dwellings, should be given lowest selection priority and should be randomly sampled to complete the quota of 350 panel families in each study area. Other factors, including the type of air conditioning and the presence of older family members living in the home, had to be dropped completely as selection criteria, since too few homes in the West Los Angeles study area had air conditioning and too few school families contained older people.

The 2-digit code system used to establish priorities in selecting families consisted of a letter (A through H) and a number (1 through 6). The codes are explained in Appendix E, Table E1. The distribution of eligible families in each study area according to the selection factors that were actually used is given in Table 2.

Selection of Families

In preparation for family selection, the surnames and 2-digit codes of all eligible families were keypunched into the computer. A separate file was established to represent each of the four study areas. The four computer files were sorted by 2-digit code and 350 families in each study area were selected beginning with the highest priority (A1) and continuing cummulatively to the lowest priority (H6). The same number of families in each study area was selected at a given priority level to ensure a match between the study areas. (As mentioned earlier, this was not possible in terms of

Table 2

DISTRIBUTION OF ELIGIBLE FAMILES IN EACH STUDY AREA BY SELECTION FACTOR

(Rounds 1 through 12)

	West Los Angeles		Garden Grove		Glendora		Upland	
	No.	%	No.	%	No.	%	No.	%
At least one preschool child in the home	104	22	142	28	148	27	111	21
No preschool children in the home	376	78	370	72	405	73	426	79
Two parents live in the home	401	84	462	90	509	92	500	93
One parent lives in the home	79	16	50	10	44	8	37	7
Single family dwelling	445	93	494	96	532	96	514	96
Multiple family dwelling	35	7	18	4	21	4	23	4
Gas Cooking	411	86	357	70	402	73	264	49
Electric Cooking	69	14	155	30	151	27	273	51
Central air conditioning	8	2	36	7	197	36	297	55
Room air conditioning	37	7	91	18	191	34	121	23
No air conditioning	435	91	385	75	165	30	119	22
Number of Families Selected	474	100%	512	100%	553	100%	537	100%

the ratio of families who cook with gas versus those who cook with electricity). This meant that the study area with the fewest number of families at a given priority level determined the number of families to be selected in the remaining study areas at that priority level.

The 1,400 families (4 study areas x 350 families per study area) were then randomly distributed into 14 groups in preparation for weekly telephone surveillance. Each group was assigned to a different telephone interviewer.

During the last week in August, the 1,400 families were sent ARD Study Calendars with letters telling them of their selection for participation and of the forthcoming telephone calls by an interviewer. Copies of this letter and the accompanying calendar are also included in Appendix E.

SECTION 6

WEEKLY TELEPHONE INTERVIEWING

This section is presented in three parts. The first part describes the recruitment and training of telephone interviewers. Part two describes the interviewing activities. The final part covers validation of the interviews.

Recruitment and Training of Telephone Interviewers

In August 1978, the contractor and subcontractor each recruited seven telephone interviewers and two alternates in preparation for weekly symptom surveillance. All interviewers had previously been members of the background survey teams. A training session was held on September 6 and 7 with all interviewers, alternates, and supervisors in attendance. An EPA instruction manual, entitled "Symptom Surveillance Interviewing Instructions: Acute Respiratory Disease Study," was distributed to each of the interviewers prior to the briefing. (A copy of the manual is presented in Appendix F.) The manual was reviewed, beginning with the instructions for conducting the presurveillance telephone call. This was followed by a demonstration on conducting the weekly symptom surveillance calls. After a period of questions and answers, interviewers were asked to practice the presurveillance and weekly interviews. Each interviewer served alternately as the respondent and then as the interviewer. A final period of questions and answers provided time for the discussion of problems which were encountered during the practice session.

Telephone Interviewing

Presurveillance telephone calls were conducted during the week of September 11. During the presurveillance calls, an interviewer ascertained, without directly asking, whether or not the respondent still wished to participate in the panel. Respondents were asked if they had received their calendars and if they had any questions relating to the use of the calendar. Next, a day and time for the weekly telephone calls was established with each respondent. Finally, all information on the background of the respondent's family was updated. A Presurveillance Telephone Call Worksheet was used for this purpose (a copy is included in the Symptom Surveillance Interviewing Instructions).

Immediately after the presurveillance interviews, the interviewers prepared index cards (called Interviewer Record Cards) for each family which confirmed willingness to participate in the study. Notes from each interview were made on the index card to assist the assigned interviewer in future calls to the respondent. At a minimum, a respondent's name and telephone number, as well as the day (Monday or Tuesday) and time of day that the respondent preferred to be called were noted on the card. Other information, such as any week when the respondent may not be available for interviewing was also noted.

Families which stated, during the presurveillance call, that they were no longer interested in participating in the study, were replaced by eligible families which were selected as alternates. A withdrawn family that cooked with gas was replaced with another family from the same study area that also cooked with gas. This was done to maintain the existing balance of selection factors and the quota of 350 panel families in each study area.

The families began to keep records of symptoms on their calendars on September 10. The first week of symptom surveillance telephoning took place during the week of September 18. Each interviewer was provided with 100 preprinted ARD Study Symptom Questionnaires, one for each of the families to which the interviewer was assigned. (A copy of the Questionnaire is included in Appendix F.)

All weekly calls to families were made on Mondays and Tuesdays whenever possible. Calls to families on Wednesdays, or symptom data taken from a family member other than the designated respondent, was permitted only after the interviewer's index cards on contacts with the family had been carefully reviewed by the field supervisors. The records of contacts with all families were reviewed at regular intervals by the field supervisors to ascertain how many of the family's surveillance calls had to be made on Wednesday, how many weeks information was taken from an alternate respondent, and how many weeks the family was unable to be contacted. If a family reported on an alternate day, used an alternate respondent, and/or failed to give a report entirely, on more than eight weeks, the family was withdrawn from the study.

Only during Week 1 were families which withdrew from the study replaced by alternates. After Week 1, no further replacements were made. At the end of each week of symptom surveillance field supervisors prepared weekly reports of telephone surveillance according to instructions provided by the EPA (see Appendix F). Included in the weekly summary of interviewing were lists of families who withdrew from the study, families not contacted during the week, and (for the presurveillance week and Week 1 of symptom surveillance only) a list of families which were added to the study.

Any changes in background information previously supplied by families were recorded as they occurred during the 26 weeks of surveillance. A Notification of ARD Study Change form was used for this purpose (a copy is included in the Symptom Surveillance Interviewing Instructions). The completed forms were xeroxed before being transported to the Project Director's office each week. The xeroxed forms were kept with copies of the completed ARD Study Background Questionnaires in the field offices for reference by the interviewers.

After every six weeks of symptom surveillance, i.e., after Weeks 6, 12, and 18, the 14 groups of families were randomly reassigned to the interviewers. In accordance with the instructions of the EPA Project Officer, no interviewer was assigned the same group of families she had interviewed previously. During Weeks 6, 12, and 18 the respondents were thanked for their cooperation over the past six weeks and given the name of the interviewer who would be calling them for the next 6-week period. All index cards (Interviewer Record Cards), current lists of the families with the day of the week and time of day they requested to be called, and xerox copies of completed Symptom Questionnaires were exchanged in order to prepare each interviewer for telephoning her newly assigned group of families.

Validation of Interviews

During Weeks 12 and 24 a random sample of 10% of the completed interviews from each interviewer's group of families was selected for validation. The selected families who had been interviewed on Monday or Tuesday of Weeks 12 and 24 were reinterviewed on Wednesday or Thursday of the same week by the field supervisors. The integrity of the validation procedure was enhanced by the exchange of assignments between the field supervisors, i.e., the prime contractor's field supervisor validated the interviews conducted by the subcontractor's interviewers and vice versa. A copy of the validation instructions is included in Appendix F.

Total of 120 and 118 validation interviews were conducted in weeks 12 and 24, respectively. The results of only six of these interviews differed from the initial interviews each week. As in the case of the ARD Background Questionnaire validation, the differences were not associated with the work of any particular interviewer or survey team, but appeared to be spread nonsystematically among the team members.

SECTION 7

CONCLUDING THE DATA COLLECTION ACTIVITIES

In January 1979, a letter of appreciation was sent to the families who had completed Background Questionnaires, but were not selected for the symptom surveillance portion of the study. A copy of this letter is included in Appendix G.

Week 26 symptom surveillance telephone calls were conducted on March 12 and 13. Table 3 shows the number of families remaining after the 26-week period of symptom surveillance. During the final week, interviewers again updated all background information for each family in addition to gathering the usual symptom information. This updated information was recorded on an "ARD Notification of Change Form," which was marked "Final" for easy identification.

On March 31, the ARD field offices located in Garden Grove and at the University of California, Riverside, were closed. The completed Symptom Questionnaires for Week 26 and Final ARD Notification of Change forms, as well as all xeroxed material on file in the field offices were transported to the Project Director's office.

On April 18, thank you letters were mailed to the 1,216 ARD families who participated throughout the 26-week period of symptom surveillance. A copy of the thank you letter is also included in Appendix G of this report.

Table 3

PERCENTAGE OF PANEL FAMILIES REMAINING AFTER 26 WEEKS OF SYMPTOM SURVEILLANCE

Study Area	No. Selected to Participate*	No. Remaining After 26 Weeks	% Remaining
West Los Angeles/ Santa Monica	350	316	90.3
Garden Grove/ Westminster	350	290	82.9
Glendora/ Covina	350	300	85.7
Upland/ Ontario	350	310	88.6
Total	1,400	1,216	86.7

*Includes replacements made after first week of surveillance.

SECTION 8

ASSURING THE ACCURACY OF THE DATA FILES

This section is presented in four parts. The first part describes the development of computer files for the background data. Part two describes quality assurance testing of these computer files. Parts three and four cover the development of computer files for the symptom surveillance data and assuring the accuracy of those files.

Preparation of Computer Files for Background Data

As soon as the completed Background Questionnaires were received from the field, they were prepared for entry into the computer. A final visual check was made for errors and omissions. Stray marks on the forms and any folds and creases in the paper were removed to facilitate optical mark reading.

The pages of the Background Questionnaire were attached by staples along the left edge. The staples were removed by cutting approximately one-quarter inch off the left edge. The reader unit was adjusted to accommodate the individual 8¼ x 11 inch sheets. All six sheets comprising one questionnaire were read before the next questionnaire was fed into the machine.

The unit used to transfer all data from the ARD Study Background Questionnaires and Symptom Questionnaires to magnetic tapes was a National Computer Services Model 7008 optical mark reader. The unit was operated by Bessler Educational Systems & Technology. The background data magnetic tapes were delivered to and subsequently put on the DEC system-10 computer at Copley Computer Services (CCS).

Family update information, doctor's diagnosis forms, and work location zip codes were coded, proofed, and edited before being key taped on the CCS computer. The zip codes were merged with the background data. The family update information and the doctor's diagnoses were placed in a separate file.

Quality Assurance Testing of the Background Data

As a preliminary step in testing the accuracy of the data files, computer range checks were performed for all questions in order to verify that all answers were within a valid range. The range checks included data from the Background Questionnaire, the family update forms, the doctor's diagnosis forms, and work location zip codes. Invalid responses were checked, recoded, and corrected on the data tapes.

The quality assurance testing procedure employed sampling inspection tables developed by Harold F. Dodge and Harry G. Romig.[1] The tables are based on a Poisson distribution, which sets the probability of accepting a file with 2.0% at 10%. The so-called lot tolerance percent defective (LTPD) plan selection assumes that there is an incoming error within the range of 0.61% to 0.80%. For a quantity of between 3,001 and 4,000 Background Questionnaires, 510 questionnaires must be drawn at random, and checked against the data from those questionnaires that exist in the computer files. According to this sampling plan, the maximum number of acceptable errors is six. For the purpose of counting errors, an error was considered to exist if one or more responses in the computer file of a particular questionnaire differed from the corresponding responses on the actual questionnaire.

The first sample of 510 questionnaires was randomly selected and compared to the corresponding computer files. The sampling test failed because more than six questionnaires were in error.

A 100% check on the Background Questionnaires was conducted as a penalty for failing the sample test. Corrections to the background data files were made and a new random sample of 510 questionnaires was selected and compared to the computer files. There were more than six family records in error, thereby making the test fail again.

Another 100% check was performed. Corrections were made to the background data files. A third random sample of 510 questionnaires was drawn and compared to the computer files. This test passed with six family records in error.

The background data files, after passing the quality assurance test, were submitted to EPA on two magnetic tapes. One tape contains the responses from the ARD Study Background Questionnaires with postal zip codes replacing the responses to Section II, Question 10.h. ("What is the address of your place of work?"). The other tape contains update information and doctors' diagnoses. Both files are unblocked on 9-track tapes in EBCIDIC format and 1,600 bpi.

The Background Questionnaire tape is labeled BAKGRD.FIL and contains 18,960 records with 80 characters per record. The update and doctors' diagnoses tape is labeled UPDATE.FIL. Its record count is 1,156 with 448 characters per record. These tapes were compiled in FORTRAN in a G format, without fixed field lengths. Data on 3,162 families, 1,402 of whom participated in the symptom surveillance portion of the study, are contained on these two tapes.

Preparation of Computer Files for Symptom Data

As each week's Symptom Questionnaires were received from the field, they were prepared for entry into the computer. Stray marks were erased and any folds and creases in the paper were removed to facilitate the transfer of the data.

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[1] Harold F. Dodge and Harry G. Romig. Sampling Inspection Tables, Single and Double Sampling. Second Edition. (New York: John Wiley & Sons, Inc., 1959)

As mentioned earlier, an optical mark reader was used to transfer the data from the weekly Symptom Questionnaires to magnetic tapes. Twenty-six tapes were used in this process, a separate tape for each week of symptom surveillance. The tapes were delivered to Copley Computer Services, put on the DEC system-10, and processed to establish the symptom data files.

Quality Assurance Testing of the Symptom Data

Computerized error checks were run on the symptom data tapes to identify conflicting responses to the questions concerning symptoms. Records with these errors were flagged to assist the data clerks performing quality assurance in spotting discrepancies between the computer tapes and the actual questionnaires.

Once again, the Dodge-Romig sampling inspection tables for a 2% error rate was employed for quality assurance testing. For a quantity of between 1,001 and 2,000 Symptom Questionnaires a random sample of 380 family records had to be selected. This was done for each of the 26 weeks of data. The computer files corresponding to the random sample of 380 questionnaires were allowed to have a maximum of four errors in order to be within the acceptable levels of the sampling plan. An error existed when a family record in the computer files did not exactly correspond to the actual questionnaire for that family.

The first three weeks of symptom data were tested using the Dodge-Romig test and comparing the computer file information to the original written forms. This was done through the use of a light table and a computer printout which duplicated the family records in the exact same format as the written forms. Errors were easily detected when the forms were overlaid with the computer printout. Corrections were made in the computer files to eliminate all of the errors encountered.

The first three weeks sampled failed with a great many errors and the decision was made to perform a 100% check of all 26 weeks of symptom data before doing any further random sampling. All 26 weeks were 100% checked by comparing the computer files to the original written forms.

Near the end of the contractor's authorized level of effort, random samples were drawn from each week of surveillance. Weeks 1, 4, 6, 13, 20, 21, 22, 23, 25, and 26 passed the test, since they had four or less errors per sample. The remaining weeks were again subjected to 100% error checks and corrections were again made to the computer files to eliminate the errors encountered. Project money was exhausted before new random samples could be drawn and applied. Since the 100% checks were made, however, it is expected that only one more set of random samples need be drawn and applied to completely satisfy the quality assurance requirements.

It is understood that the EPA will replicate the quality assurance task on the Background and Symptom data files. Whether or not Weeks 2, 3, 5, 7, 8-12, 14-19, and 24 can pass the test without further 100% checks will be determined at that time. It is the contractor's expectation that they will pass with very few errors being found during the process.

The symptom data files were submitted to the EPA on 26 magnetic tapes, one for each week of symptom surveillance. All of these files are unblocked on 9-track tape in EBCIDIC format and 1,600 bpi.

The Symptom Questionnaire tapes are labeled as shown in Table 4. The tapes were compiled in FORTRAN with fixed field lengths. Each record contains 1,036 characters. The numbers of families and records contained in each tape are also shown in Table 4.

Table 4

MAGNETIC TAPE FILE NAMES, NUMBER OF FAMILIES, AND NUMBER OF RECORDS CONTAINED ON EACH TAPE, BY WEEK OF SURVEILLANCE

Week of Symptom Surveillance	Magnetic Tape File Name	No. of Families From Which Data Were Collected	No. of Records Contained on Tape
1	WEEK01.C3	1259	1472
2	WEEK02.C3	1292	1518
3	WEEK03.C2	1265	1488
4	WEEK04.C2	1274	1493
5	WEEK05.C2	1263	1476
6	WEEK06.C2	1260	1469
7	WEEK07.C1	1252	1473
8	WEEK08.C2	1231	1442
9	WEEK09.C2	1241	1451
10	WEEK10.C2	1211	1415
11	WEEK11.C2	1209	1404
12	WEEK12.C2	1201	1405
13	WEEK13.C2	1191	1397
14	WEEK14.C2	1169	1366
15	WEEK15.C2	1106	1291
16	WEEK16.C2	1151	1357
17	WEEK17.C2	1183	1386
18	WEEK18.C2	1175	1380
19	WEEK19.C2	1186	1395
20	WEEK20.C2	1174	1383
21	WEEK21.C2	1179	1385
22	WEEK22.C1	1179	1378
23	WEEK23.C1	1174	1376
24	WEEK24.C2	1174	1376
25	WEEK25.C1	1163	1365
26	WEEK26.C2	1183	1388

Appendix A

STUDY AREA CHARACTERISTICS

Appendix A1

SELECTED SOCIOECONOMIC CHARACTERISTICS OF RECOMMENDED STUDY AREA IN UPLAND, CALIFORNIA, BY CENSUS TRACT

	Census Tract						
Population Statistics	2*	8.01	8.02	8.03	10	11	12
Total Population	9,077	5,909	9,114	15,760	7,280	10,405	3,936
Number of Children 14 Years or Younger	3,203	1,966	3,116	4,552	2,244	2,389	887
Percent of Children in Total Population 14 Years or Younger	35.3%	33.3%	34.2%	28.9%	30.8%	23.0%	22.5%
No. of Husband-Wife Families With Own Children Under 18 Years	1,324	915	1,391	2,241	1,047	1,318	489
No. of Children in Husband-Wife Families	3,242	2,207	3,338	4,756	2,268	2,755	1,013
Median Age (Years)	23.3	26.6	25.0	27.1	26.6	35.2	37.6
Percent Nonminority White	98%	99%	97%	99%	98%	99%	99%
Median Family Income	$10,977	$15,481	$12,838	$11,886	$11,525	$12,200	$11,468
Median Value of Owner-Occupied, Single-Family Units	$18,200	$32,400	$24,200	$23,900	$18,900	$19,900	$17,800
Percent Single-Family Units in Total Units	88%	97%	96%	65%	67%	81%	94%

*Represents only that proportion of the census tract which lies within the recommended study area.

Appendix A2

SELECTED SOCIOECONOMIC CHARACTERISTICS OF RECOMMENDED STUDY AREA
IN WEST LOS ANGELES, CALIFORNIA, BY CENSUS TRACT

Population Statistics	Census Tract 2643.01*	2653.02*	2655	2656	2657	2671	2672	2674.02*	2678
Total Population	2,027	3,320	4,702	4,310	3,883	4,728	9,298	2,563	2,259
Number of Children 14 Years or Younger	232	173	475	533	489	656	674	224	441
Percent of Children in Total Population 14 Years or Younger	11.4%	5.2%	10.1%	12.4%	12.6%	13.9%	7.2%	8.7%	19.5%
No. of Husband-Wife Families With Own Children Under 18 Years	121	99	269	298	276	364	359	129	244
No. of Children in Husband-Wife Families	182	135	442	526	481	634	614	195	448
Median Age (Years)	31.1	24.5	40.4	46.1	45.7	40.2	36.1	34.9	43.9
Percent Nonminority White	97%	93%	98%	98%	98%	97%	97%	94%	97%
Median Family Income	$11,981	$12,439	$13,831	$16,655	$18,711	$13,992	$13,290	$12,522	$12,236
Median Value of Owner-Occupied, Single-Family Units	$35,000	$50,000+	$47,800	$49,600	$50,000	$39,700	$33,700	$35,200	$31,100
Percent Single-Family Units in Total Units	7%	5%	17%	28%	23%	41%	37%	9%	78%

*Represents only that proportion of the census tract which lies within the recommended study area.

Appendix A2 (Continued)

SELECTED SOCIOECONOMIC CHARACTERISTICS OF RECOMMENDED STUDY AREA IN WEST LOS ANGELES, CALIFORNIA, BY CENSUS TRACT

Population Statistics	Census Tract 2679	2691	2692	2693	2699.01	2711.01	2711.02	2712	2713
Total Population	4,111	4,663	2,296	4,541	5,081	2,549	1,421	3,200	2,764
Number of Children 14 Years or Younger	407	464	332	956	611	552	314	654	536
Percent of Children in Total Population 14 Years or Younger	9.9%	10.0%	14.5%	21.1%	12.0%	21.7%	22.1%	20.4%	19.4%
No. of Husband-Wife Families With Own Children Under 18 Years	251	317	223	550	321	284	165	330	271
No. of Children in Husband-Wife Families	431	519	401	1,080	511	568	330	659	538
Median Age (Years)	52.5	49.9	45.2	38.4	32.1	38.6	32.2	34.9	38.3
Percent Nonminority White	99%	99%	99%	98%	97%	96%	96%	91%	95%
Median Family Income	$15,831	$13,532	$17,627	$18,454	$10,456	$12,885	$10,917	$11,106	$10,877
Median Value of Owner-Occupied, Single-Family Units	$35,400	$43,200	$50,000+	$44,800	$24,800	$29,700	$28,300	$29,600	$27,300
Percent Single-Family Units in Total Units	36%	32%	54%	79%	14%	83%	59%	57%	72%

Appendix A2 (Continued)

SELECTED SOCIOECONOMIC CHARACTERISTICS OF RECOMMENDED STUDY AREA IN WEST LOS ANGELES, CALIFORNIA, BY CENSUS TRACT

	Census Tract								
Population Statistics	2714	2715	2716	2717.01	2718	2722	2723.01	2731*	2737
Total Population	4,801	3,629	2,846	3,863	7,925	4,814	2,947	2,143	2,963
Number of Children 14 Years or Younger	1,524	760	695	634	1,566	1,064	585	489	802
Percent of Children in Total Population 14 Years or Younger	31.7%	20.9%	24.4%	16.4%	19.8%	22.1%	19.9%	22.8%	27.1%
No. of Husband-Wife Families With Own Children Under 18 Years	760	444	380	337	797	508	298	233	325
No. of Children in Husband-Wife Families	1,627	824	752	610	1,423	886	573	490	748
Median Age (Years)	29.0	34.8	33.9	32.9	30.1	27.5	33.4	34.3	30.8
Percent Nonminority White	96%	96%	96%	97%	96%	95%	94%	95%	97%
Median Family Income	$14,622	$14,819	$15,903	$13,015	$10,653	$10,623	$11,719	$10,320	$10,397
Median Value of Owner-Occupied, Single-Family Units	$30,900	$34,000	$44,800	$30,200	$26,600	$24,300	$28,700	$28,000	$23,800
Percent Single-Family Units in Total Units	99%	64%	54%	44%	27%	28%	52%	55%	78%

*Represents only that proportion of the census tract which lies within the recommended study area.

Appendix A2 (Continued)

SELECTED SOCIOECONOMIC CHARACTERISTICS OF RECOMMENDED STUDY AREA IN WEST LOS ANGELES, CALIFORNIA, BY CENSUS TRACT

Population Statistics	Census Tract 2754*	7010	7022*	7023	7025*	7027*	7028.01	7028.02
Total Population	1,663	5,931	1,911	6,663	1,947	3,129	3,909	3,134
Number of Children 14 Years or Younger	450	761	411	1,117	424	749	802	682
Percent of Children in Total Population 14 Years or Younger	27.1%	12.8%	21.5%	16.8%	21.8%	23.9%	20.5%	21.8%
No. of Husband-Wife Families With Own Children Under 18 Years	203	454	197	572	234	407	412	354
No. of Children in Husband-Wife Families	442	812	381	1,033	456	808	745	665
Median Age (Years)	28.9	46.1	33.8	38.1	35.1	34.8	36.4	33.3
Percent Nonminority White	92%	99%	96%	97%	98%	97%	97%	96%
Median Family Income	$10,339	$17,258	$11,137	$10,930	$12,664	$13,686	$10,917	$10,731
Median Value of Owner-Occupied, Single-Family Units	$23,300	$50,000+	$30,400	$30,000	$31,600	$30,000	$24,700	$27,200
Percent Single-Family Units in Total Units	77%	25%	47%	49%	61%	88%	44%	43%

*Represents only that proportion of the census tract which lies within the recommended study area.

Appendix A3

SELECTED SOCIOECONOMIC CHARACTERISTICS OF RECOMMENDED STUDY AREA IN GLENDORA, CALIFORNIA, BY CENSUS TRACT

	Census Tract							
Population Statistics	4004.01	4005	4009	4010.01	4010.02	4011.01	4012.01	4012.02
Total Population	3,990	2,025	4,301	3,028	3,103	4,757	2,903	4,834
Number of Children 14 Years or Younger	1,351	588	1,310	954	697	1,408	1,131	1,942
Percent of Children in Total Population 14 Years or Younger	33.9%	29.0%	30.5%	31.5%	22.5%	29.6%	39.0%	40.2%
No. of Husband-Wife Families With Own Children Under 18 Years	653	287	638	488	351	647	523	774
No. of Children in Husband-Wife Families	1,555	724	1,386	1,114	744	1,423	1,159	1,977
Median Age (Years)	25.0	24.8	27.3	28.6	35.4	24.7	22.9	20.9
Percent Nonminority White	99%	98%	99%	100%	99%	99%	99%	98%
Median Family Income	$16,253	$17,125	$12,515	$14,745	$11,650	$11,423	$12,759	$11,882
Median Value of Owner-Occupied, Single-Family Units	$31,500	$40,500	$21,200	$28,300	$21,900	$22,600	$22,400	$21,200
Percent Single-Family Units in Total Units	100%	99%	91%	98%	75%	72%	98%	100%

Table A3 (Continued)

SELECTED SOCIOECONOMIC CHARACTERISTICS OF RECOMMENDED STUDY AREA IN GLENDORA, CALIFORNIA, BY CENSUS TRACT

	Census Tract							
Population Statistics	4012.03	4013.01*	4013.02*	4037.01	4037.02*	4038	4039.01	4039.02
Total Population	4,043	5,327	509	7,066	3,250	4,737	3,476	4,826
Number of Children 14 Years or Younger	1,466	1,634	188	2,554	935	2,610	1,388	1,641
Percent of Children in Total Population 14 Years or Younger	36.3%	30.7%	36.9%	36.1%	28.8%	55.1%	39.9%	34.0%
No. of Husband-Wife Families With Own Children Under 18 Years	637	674	81	1,079	458	1,180	568	710
No. of Children in Husband-Wife Families	1,543	1,585	189	2,733	999	2,716	1,403	1,685
Median Age (Years)	24.4	28.6	21.1	24.1	26.0	24.4	21.2	27.2
Percent Nonminority White	98%	92%	99%	98%	98%	99%	99%	98%
Median Family Income	$12,566	$10,667	$18,416	$13,708	$11,552	$12,447	$11,232	$12,344
Median Value of Owner-Occupied, Single-Family Units	$24,300	$19,000	$42,600	$26,900	$23,800	$22,100	$18,900	$21,300
Percent Single-Family Units in Total Units	89%	94%	94%	100%	67%	96%	99%	98%

*Represents only that proportion of the census tract which lies within the recommended study area.

Table A4

SELECTED SOCIOECONOMIC CHARACTERISTICS OF RECOMMENDED STUDY AREA IN GARDEN GROVE, CALIFORNIA, BY CENSUS TRACT

Population Statistics	Census Tract 875.02*	876.01*	876.02	877.02*	880.01*	880.02	881.02	881.03*
Total Population	4,245	1,093	5,477	4,754	1,045	3,345	2,480	2,956
Number of Children 14 Years or Younger	1,049	236	1,095	1,679	361	1,001	833	788
Percent of Children in Total Population 14 Years or Younger	24.7%	21.6%	20.0%	35.3%	34.8%	29.9%	33.6%	26.6%
No. of Husband-Wife Families With Own Children Under 18 Years	500	139	772	723	167	506	386	379
No. of Children in Husband-Wife Families	961	287	1,704	1,766	394	1,126	880	779
Median Age (Years)	27.9	31.7	27.1	22.4	22.8	26.5	26.1	28.0
Percent Nonminority White	98%	98%	98%	98%	98%	99%	98%	98%
Median Family Income	$10,024	$13,210	$12,250	$12,419	$12,849	$13,405	$12,426	$10,191
Median Value of Owner-Occupied, Single-Family Units	$28,500	$30,000	$28,200	$23,100	$23,200	$28,100	$23,500	$22,600
Percent Single-Family Units in Total Units	46%	54%	69%	82%	98%	89%	95%	73%

*Represents only that proportion of the census tract which lies within the recommended study area.

Appendix A4 (Continued)

SELECTED SOCIOECONOMIC CHARACTERISTICS OF RECOMMENDED STUDY AREA
IN GARDEN GROVE, CALIFORNIA, BY CENSUS TRACT

	Census Tract							
Population Statistics	882.01	882.02	882.03	883.01	883.02	884.01	884.02	884.03*
Total Population	3,956	2,833	3,204	5,065	4,566	5,419	2,828	2,080
Number of Children 14 Years or Younger	1,069	862	910	1,495	1,240	1,853	862	627
Percent of Children in Total Population 14 Years or Younger	27.0%	30.4%	28.4%	29.5%	27.2%	34.2%	30.5%	30.1%
No. of Husband-Wife Families With Own Children Under 18 Years	539	403	418	680	607	839	361	272
No. of Children in Husband-Wife Families	1,187	947	967	1,602	1,403	1,991	796	623
Median Age (Years)	27.9	27.8	27.0	28.8	30.4	22.0	25.3	26.0
Percent Nonminority White	99%	98%	99%	98%	98%	99%	97%	98%
Median Family Income	$12,978	$13,466	$12,504	$12,455	$13,407	$12,377	$11,594	$10,853
Median Value of Owner-Occupied, Single-Family Units	$28,400	$26,700	$24,600	$24,400	$26,800	$22,800	$22,900	$21,300
Percent Single-Family Units in Total Units	69%	100%	75%	79%	88%	94%	63%	77%

*Represents only that proportion of the census tract which lies within the recommended study area.

Appendix A4 (Continued)

SELECTED SOCIOECONOMIC CHARACTERISTICS OF RECOMMENDED STUDY AREA IN GARDEN GROVE, CALIFORNIA, BY CENSUS TRACT

	Census Tract							
Population Statistics	885.01	885.02*	886.02	887.02	888	889.01	889.02	889.03
Total Population	3,872	2,230	3,307	4,111	6,556	3,834	4,212	6,251
Number of Children 14 Years or Younger	1,050	748	914	1,155	1,791	1,334	1,657	2,534
Percent of Children in Total Population 14 Years or Younger	27.1%	33.5%	27.6%	28.1%	27.3%	34.8%	39.3%	40.5%
No. of Husband-Wife Families With Own Children Under 18 Years	457	322	408	553	819	563	660	972
No. of Children in Husband-Wife Families	1,098	754	941	1,118	1,813	1,335	1,641	2,547
Median Age (Years)	27.6	24.8	29.0	26.3	25.4	25.0	20.5	19.7
Percent Nonminority White	98%	98%	97%	99%	98%	97%	97%	96%
Median Family Income	$10,745	$10,767	$10,273	$10,090	$11,569	$11,432	$11,253	$10,730
Median Value of Owner-Occupied, Single-Family Units	$22,700	$22,000	$22,000	$22,400	$22,900	$23,300	$23,200	$22,500
Percent Single-Family Units in Total Units	67%	76%	81%	66%	51%	77%	85%	93%

*Represents only that proportion of the census tract which lies within the recommended study area.

Appendix A4 (Continued)

SELECTED SOCIOECONOMIC CHARACTERISTICS OF RECOMMENDED STUDY AREA IN GARDEN GROVE, CALIFORNIA, BY CENSUS TRACT

	Census Tract							
Population Statistics	889.04	889.05	890.01	890.02	891.01*	992.02*	992.03	992.04
Total Population	3,438	4,185	3,985	4,683	1,774	2,126	4,737	2,454
Number of Children 14 Years or Younger	1,331	1,719	1,669	1,805	589	827	2,025	1,013
Percent of Children in Total Population 14 Years or Younger	38.7%	41.1%	41.9%	38.5%	33.2%	38.9%	42.7%	41.3%
No. of Husband-Wife Families With Own Children Under 18 Years	550	691	588	639	244	326	801	420
No. of Children in Husband-Wife Families	1,317	1,767	1,608	1,687	593	802	2,165	1,054
Median Age (Years)	22.7	19.6	19.3	21.5	25.4	22.3	18.6	20.1
Percent Nonminority White	97%	97%	90%	96%	98%	93%	97%	97%
Median Family Income	$12,429	$10,982	$10,486	$10,313	$11,890	$11,386	$13,190	$13,817
Median Value of Owner-Occupied, Single-Family Units	$25,200	$22,700	$21,900	$21,900	$23,100	$22,100	$26,300	$28,500
Percent Single-Family Units in Total Units	84%	97%	90%	82%	84%	87%	100%	88%

*Represents only that proportion of the census tract which lies within the recommended study area.

Appendix A4 (Continued)

SELECTED SOCIOECONOMIC CHARACTERISTICS OF RECOMMENDED STUDY AREA
IN GARDEN GROVE, CALIFORNIA, BY CENSUS TRACT

Population Statistics	Census Tract					
	992.05	997.01*	997.02*	997.03*	998.01	998.03
Total	6,157	2,430	2,720	1,056	1,989	3,445
Number of Children 14 Years or Younger	2,326	841	1,084	391	641	1,063
Percent of Children in Total Population 14 Years or Younger	37.8%	34.6%	39.9%	37.1%	32.2%	30.9%
No. of Husband-Wife Families With Own Children Under 18 Years	993	329	463	160	281	442
No. of Children in Husband-Wife Families	2,449	812	1,104	388	609	967
Median Age (Years)	25.1	24.5	21.6	25.3	25.3	25.9
Percent Nonminority White	97%	98%	98%	98%	97%	98%
Median Family Income	$13,529	$10,766	$11,211	$12,641	$10,194	$12.031
Median Value of Owner-Occupied, Single-Family Units	$29,400	$20,200	$24,000	$26,800	$22,200	$23,500
Percent Single-Family Units in Total Units	99%	92%	89%	88%	74%	72%

*Represents only that proportion of the census tract which lies within the recommended study area.

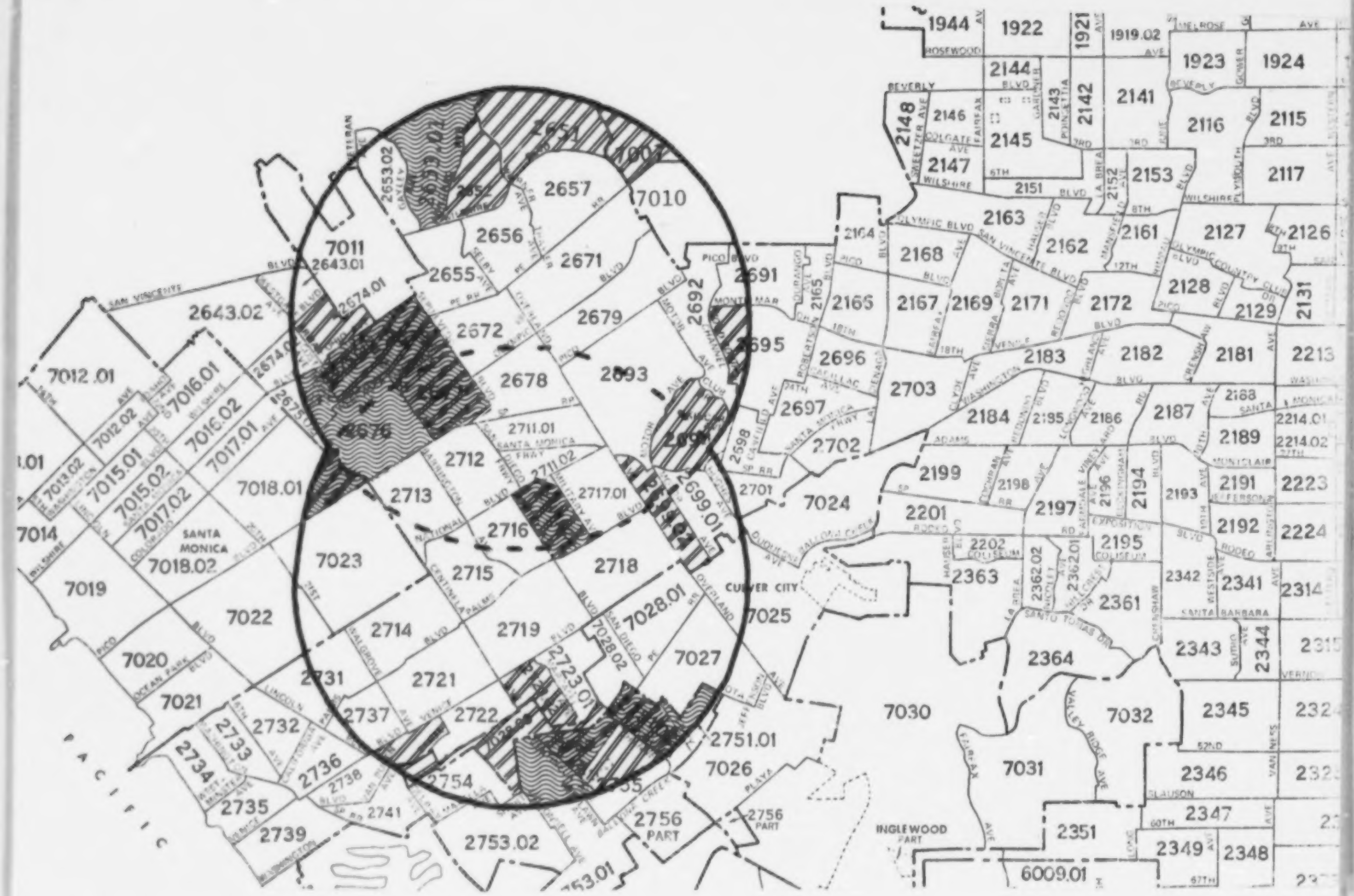


Figure A1: STUDY AREA FOR WEST LOS ANGELES, CALIFORNIA

0 1 2 Miles

▨ Median Family Income <$10,000 or >$20,000

▒ <90 Percent Nonminority White

▩ Median Family Income <$10,000 or >$20,000, and <90 Percent Nonminority White

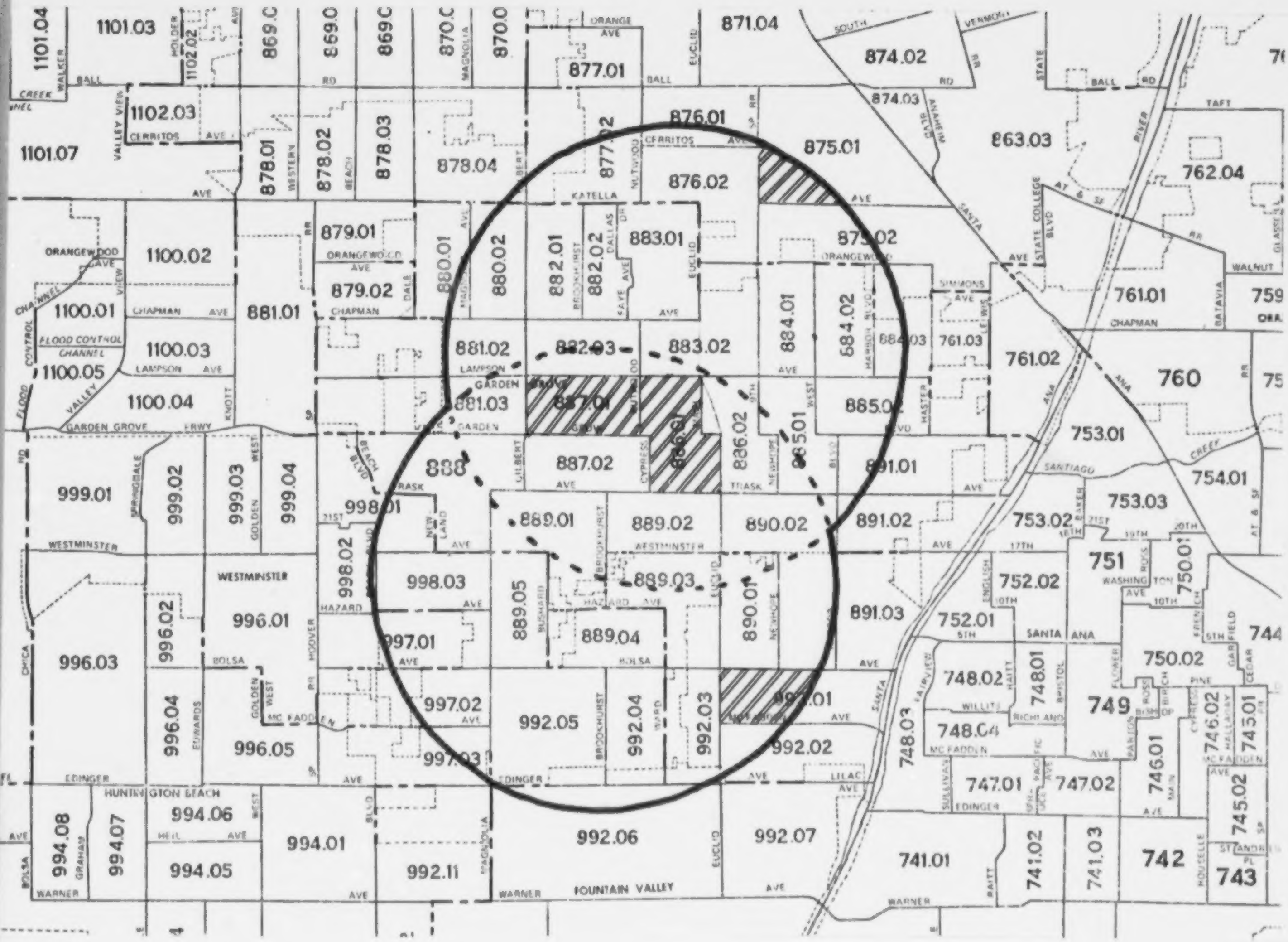


Figure A2: STUDY AREA FOR GARDEN GROVE, CALIFORNIA

0 1 2

Miles

▨ Median Family Income <$10,000 or >$20,000

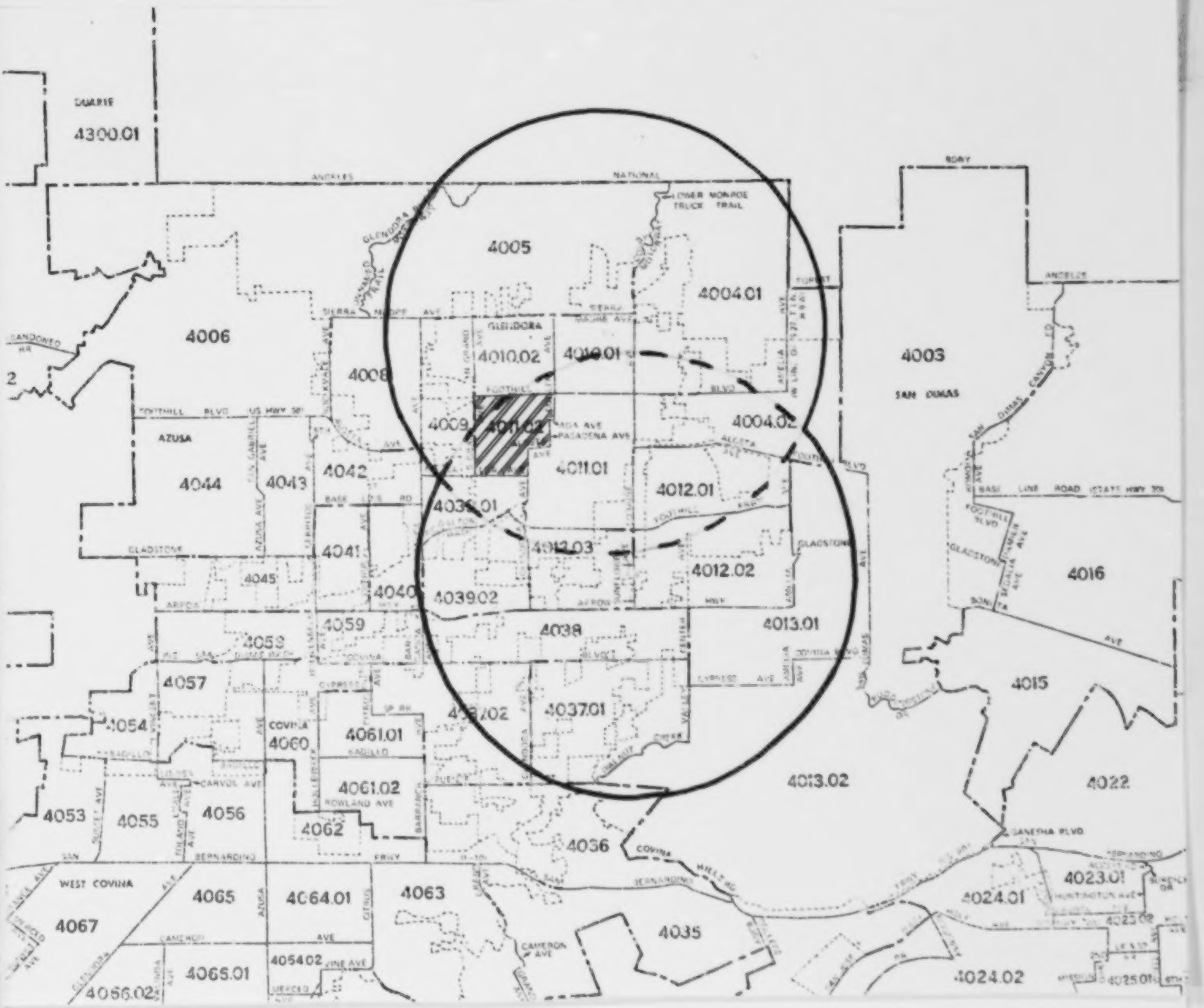


Figure A3: STUDY AREA FOR GLENDORA, CALIFORNIA

0 1 2 Miles

▨ Median Family Income <$10,000 or >$20,000

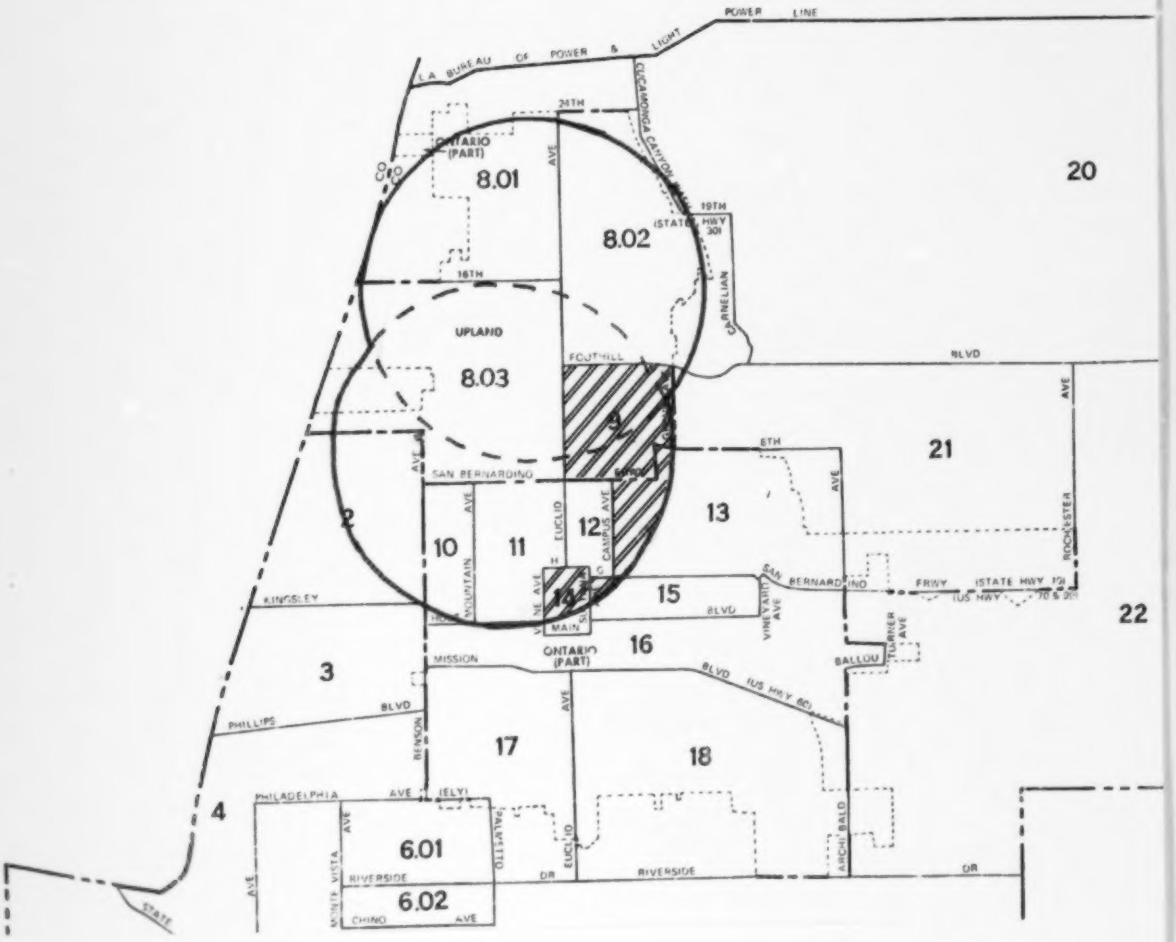


Figure A4: STUDY AREA FOR UPLAND, CALIFORNIA

0 1 2 Miles

▨ Median Family Income <$10,000 or >$20,000

Appendix B

INTERVIEWER INSTRUCTIONS

ARD STUDY INTERVIEWERS' INSTRUCTIONS

May 1978

COPLEY INTERNATIONAL CORPORATION

Economic Research • Marketing Research • Environmental Research • Management Services

May 1978

Dear Interviewer:

We are happy to welcome those of you who have worked with us in the past as well as those of you who are newcomers to CIC. Whether you are a new or old hand at CIC, we would like to review some of the details of the study and personnel policies with you.

This comprehensive Interviewer Instruction Manual has been prepared for your reference during this briefing as well as when you go into the field to complete your interviewing assignments. Feel free to make any notes on these materials that you wish, both during the briefing and afterwards. Mark any items which seem unclear to you so they can be discussed during the briefing or clarified by your team leader. Keep it on hand to answer questions when you go into the field or prepare your time cards and expense sheets. This is your own personal instruction manual and it does not need to be returned.

During this briefing, your team leader will provide you with your first interviewing assignment and an adequate supply of blank questionnaires. We expect to be interviewing for approximately 8 to 12 weeks. In the beginning we will follow a rigid community schedule as shown in this manual. However as interviewing progresses, schedules will be rearranged to facilitate making callbacks when and where necessary. If your schedule changes and you find you will not be able to work the number of hours required to complete the number of interviews assigned to you, please advise your team leader immediately so that she can work with you in rearranging your hours and/or assignment.

The pay rate for interviewers is now $3.40 per hour. In addition, expenses such as parking fees, toll calls, and other authorized expenses pertaining to this job, will be reimbursed upon submission of a properly completed expense sheet and all the receipts. Mileage from your home, to your assigned interviewer area, and to home will be reimbursed at a rate of 17¢ per mile providing you record your start and finish odometer readings each day on an expense form. Your team leader will give you your time cards, time record sheets, and expense sheets, and tell you when they must be returned to her.

7817 HERSCHEL AVENUE • P.O. BOX 1530 • LA JOLLA, CALIFORNIA 92037
TELEPHONE (714) 454-0391

If you have any questions, don't hesitate to call Nancy Ternullo, your Field Supervisor, or your team leader at any time. We look forward to working with you on this challenging and very important study. See you at the briefing.

Sincerely,

Joyce Revlett

Joyce G. Revlett
Project Coordinator

JGR:jld

ARD Briefing

Administrative Offices
Garden Grove Unified School District
10331 Stanford Avenue, Garden Grove

AGENDA

May 18, 1978

9:00 a.m.*	Greeting and Introduction	R. David Flesh
9:30 a.m.	Interviewing Insights	R. David Flesh
10:30 a.m.	Discussion of Preparations for Interviewing	Field Supervisors
11:30 a.m.	Lunch Break	

1:00 p.m.**	Discussion of Questionnaire Administration	Dr. Wilson Riggan Dr. Dorothy Calafiore
3:00 p.m.	Results of Interview Pretest	Field Supervisors & Team Leaders
4:00 p.m.	Practice Interviewing	Interviewer Teams
5:00 p.m.	Adjourn	

May 19, 1978

9:00 a.m.**	Practice Interviewing and Question-Answer Period	Field Supervisors
10:00 a.m.	Interviews conducted in the field	Interviewers

2:00 p.m.**	Question-Answer Period	R.D. Flesh, Moderator
3:00 p.m.	Reports of Home Interviews	Selected Interviewers
5:00 p.m.	Adjourn	

Special Guests

Dr. Wilson Riggan, Project Officer, Population Studies Division Health Effects Research Laboratory, Environmental Protection Agency, Research Triangle Park, NC

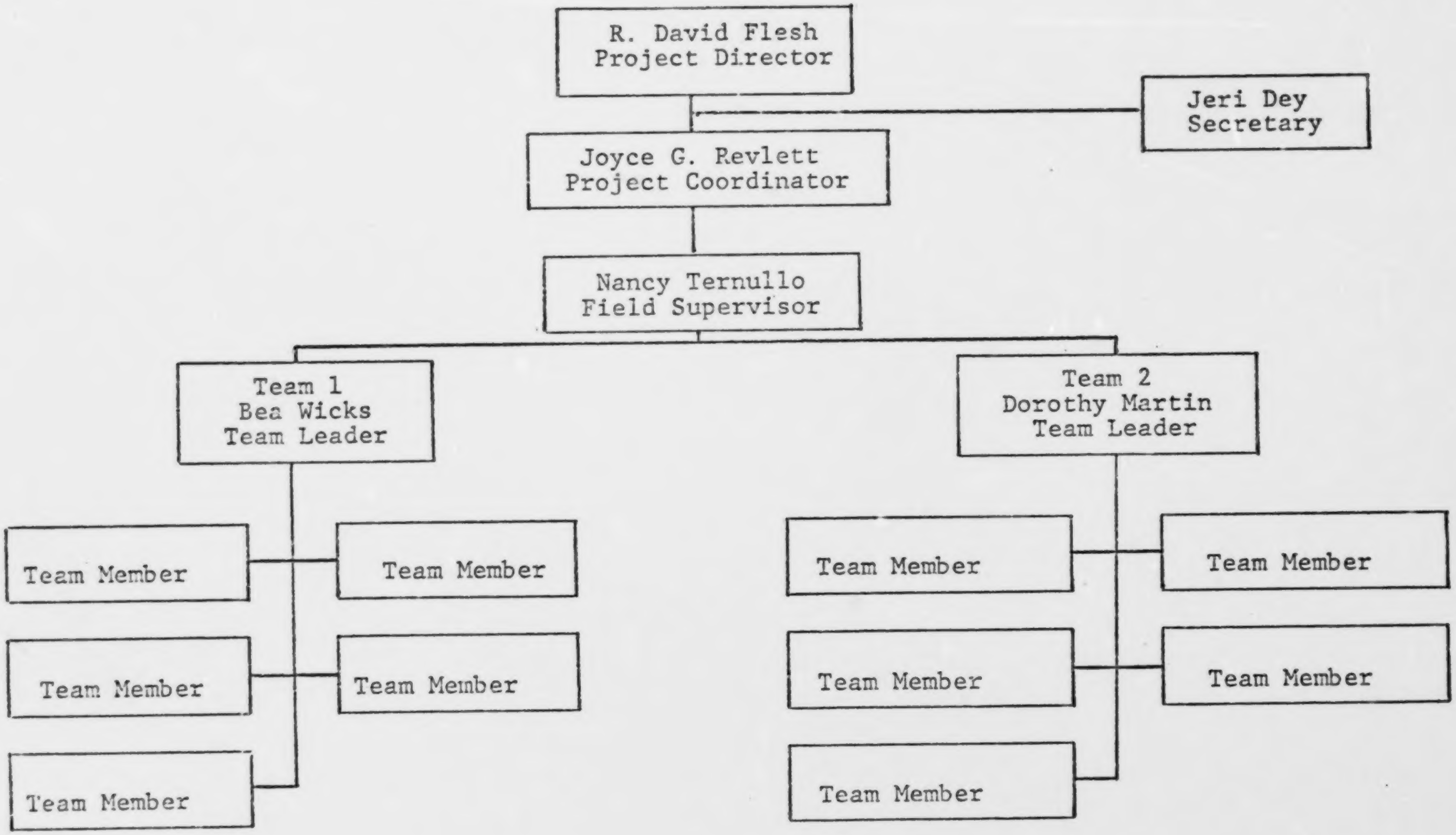
Dr. Dorothy C. Calafiore, Senior Research Epidemiologist, Population Studies Division, Health Effects Research Laboratory, Environmental Protection Agency, Research Triangle Park, NC

*Meeting will be held in 2nd floor conference room
**Meeting will be held in annex

ORGANIZATION CHART

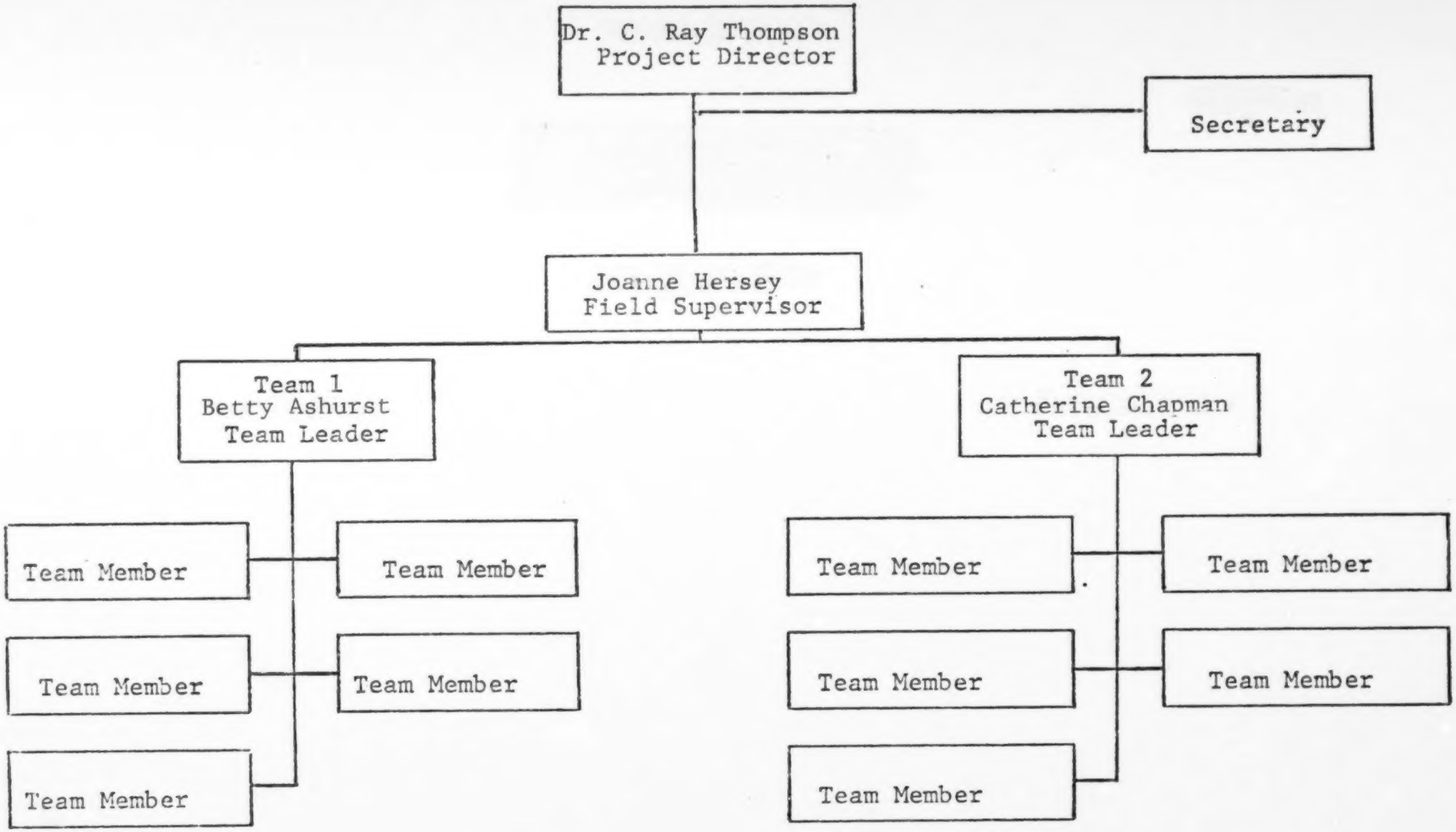
COPLEY INTERNATIONAL CORPORATION

Environmental Sciences Department



ORGANIZATION CHART

UNIVERSITY OF CALIFORNIA, RIVERSIDE



CIC ARD STUDY TESTING TEAMS

Field Supervisor

Nancy Ternullo
11650 Chester Avenue
Garden Grove 92640
537-3126 (home)
534-5411 (office)

Team I

Team Leader:

Bea Wicks
12031 Candy Lane
Garden Grove 92640
534-6753

Team Members:

Betty Dumas
6220 San Ricardo Way
Buena Park 90620
828-5375

Irene Hite
11772 Eudora Lane
Garden Grove 92640
534-1729

Laurie Mastin
16221 Quartz St.
Westminster 92683
847-1514

Jean Tiller
9950 Del Rio Way
Cypress 90630
826-6243

Kay Wirth
2020 Gregory
Fullerton 92633
871-4450

Team 2

Team Leader:

Dorothy Martin
1723 W. McEvoy Lane
Santa Ana 92706
971-3909

Team Members:

Alyce Gould
5081 Tasman Dr.
Huntington Beach 92649
892-1993

Ruth Hapke
21721 Seaside Lane
Huntington Beach 92646
968-1141

Alice Hayes
10043 Los Coyotes Ct.
Fountain Valley 92708
962-4735

Eleanor Troutt
3261 Michigan Avenue
Costa Mesa 92626
546-7481

Nancy Webb
9382 Vons
Garden Grove 92641
539-9478

(All telephone numbers are area code 714)

UCR ARD STUDY TESTING TEAMS

Field Supervisor

Joanne R. Hershey
3783 Mt. Rubidoux Dr.
Riverside 92501
682-1846 (home)
787-4323 (Trailer #10)
787-5136 (Air Pollution Shop)

Team I

Team Leader:

Betty Ashurst
250 Cascade
Rialto 92376
875-3192

Team Members:

Genevieve Burleson
511 Glenhill Dr.
Riverside 92507
683-7138

Denise Doyle
4931 Strawberry Lane
Riverside 92509
685-4218

Gertrude Miller
1807 W. Lullaby Lane
Anaheim 92804
635-2989

Diane Murdoch
8801 Pigeon Pass Rd.
Riverside 92388
781-9362

Ruth Wilson
4263 Linwood
Riverside 92506
684-3267

Team II

Team Leader:

Catherine Chapman
6651 Catalina
Riverside 92504
684-4513

Team Members:

Cora Lindeburg
2989 Laramie Rd.
Riverside 92506
683-3942

Lee Shields
3700 Buchanan #146
Riverside 92503
688-1417

Joanne Shoup
4337 Rosewood
Riverside 92506
684-6177

Virginia Stout
6915 Streeter
Riverside 92504
689-8732

Eletta Wild
5709 Durango Rd.
Riverside 92506
683-7790

Alternate Team Members:

Marcia Bastian
3725 Cranford, #41
Riverside 92507
787-9392

Joyce Bateman
1520 Ransom Road
Riverside 92506
682-3806

Sybil Brown
764 Sequoia
San Bernadino 92407
883-3122

(All telephone numbers are area code 714)

STUDY BACKGROUND AND PURPOSE

The purpose of this study is to determine the effects of exposure to oxides of nitrogen and other air pollutants on the incidence and severity of acute respiratory disease. We refer to it, therefore, as "the ARD Study," i.e., an acute respiratory disease study.

Four study areas have been established in the following cities: Upland/Ontario, Glendora/Covina, West Los Angeles/Santa Monica, and Garden Grove/Westminster. Each of the study areas has been broken down into five zones which are located at certain distances from two air monitoring stations in each study area. Refer to the Map Section of this manual for a view of the study areas and zones.

The study population will consist of families who have children in elementary school. School districts have supplied the addresses of school families living in each of the study areas. These addresses have been plotted in order to determine into which of the five zones they fall. Interviewers will attempt to contact families in Zone 1 first. As work nears completion in Zone 1, interviewers will be given assignments in Zone 2. This sequence will continue until a sufficient number of interviews have been completed or until all attempts have been exhausted through Zone 4. Zone 5 will be assigned only if the study population cannot be enrolled in Zones 1 through 4.

Face-to-face interviews will be conducted with school families during May, June, and July of this year. Each morning the team leaders will assign the interviewers a portion of a zone and give them the addresses of the school families to be contacted that day. Interviewers will receive enough addresses each morning to allow for families who are not at home when they call. Background information will be collected on all school families who live in the study areas and who are willing to be interviewed. During the interviews, the respondents for the families will be asked if they would be willing to participate in a 12-month period of recording disease symptoms experienced by members of their households. Interviewing will continue until a sufficient number of eligible families in each study area have agreed to participate in this year-long panel.

Once a sufficient number of interviews has been completed in each study area, the interviewing portion of the study will end. The remaining details of the study are mentioned solely for the information of the interviewers. Families will be notified by mail in early September regarding whether or not they have been selected to participate in the year-long panel. Symptom recording will begin in mid-September 1978. Families will be contacted weekly by telephone for a report of their symptoms.

Copley International Corporation (CIC) is in charge of conducting the face-to-face interviews and later of collecting the symptom records by telephone. The University of California at Riverside (UCR) will assist CIC in this work. Air pollution data will be gathered throughout the study at two air monitoring stations erected and operated in each study area for the U.S. Environmental Protection Agency (EPA) by the Xonics corporation. Summaries of the air pollution data will be sent to CIC for use in the analysis of the symptom records.

PREPARATION FOR INTERVIEWING

Initial Preparation

Lists of addresses of families with elementary school children have been obtained from the school districts in each of the study areas. These addresses were then pinpointed on larger versions of the study maps included in this manual to determine into which of the five zones they fall. Following this, each family's address was written on an index card according to the following color scheme:

Zone 1 - Pink
Zone 2 - Green
Zone 3 - Yellow
Zone 4 - Blue
Zone 5 - Salmon

Once all addresses were transferred to the appropriate color-coded index cards, each group of colored index cards was divided into daily interviewer assignments. By plotting and grouping the addresses before distribution, each interviewer's daily assignment could be confined to a small area, thereby minimizing the amount of travel necessary for her to locate and interview the families assigned to her.

Your Responsibilities as an Interviewer

At the training session you will receive a map of each of the study areas and your first day's supply of blank questionnaires and index cards representing the families which you have been assigned to interview in Zone 1 of the first study area. You will meet with your team leader every morning, at which time you will give her the questionnaires you completed on the previous day and all index cards. During your meeting you will receive a new supply of index cards and blank questionnaires to use following the meeting that day. The index cards for families which you were unable to contact will be returned to you by your team leader to make callbacks to these families during your next visit to that community. The schedule for visiting a family is:

- 1st attempt - between 8 a.m. and 5 p.m. any weekday.
- 2nd attempt - in afternoon (1-5) if 1st attempt was in the morning (8-12) or vice versa. This attempt to be on a day of the week other than the first call.
- 3rd attempt - any weekday and hour between 8 a.m. and 5 p.m. but the hour and day of week must differ from attempt 1 and 2.
- 4th attempt - in the afternoon (1-5) if the 3rd attempt was in the morning (8-12) or vice versa, but a different hour and day of week from the previous attempt.
- 5th attempt - during evening hours 5 to 8 p.m.
- 6th attempt - Saturday or Sunday.

If a neighbor or other knowledgeable person says both husband and wife work and are home only during the evenings, skip attempts 2 through 4 and go to attempt 5 for an evening call.

Working a maximum of 40 hours per week, you will visit each community as designated on the calendar given in this manual.

Each day you will attempt to contact the families assigned to you. A more definitive explanation of the callback procedure will be presented at the training session.

The schedule for visiting a family as shown above will minimize the need for Saturday interviewing. On the few occasions when Saturday interviewing is necessary, your team leader will pool all families that must be interviewed and will make appropriate Saturday assignments. Every effort will be made to reduce the number of Saturday's and the number of interviewers that will be needed on Saturday's.

All CIC and UCR interviewers will have solicitors' permits for the following communities which require them:

- Glendora (CIC and UCR)
- Garden Grove (CIC only)
- Covina (CIC only)

All interviewers will also carry either a CIC or UCR identification card. Each day before going into the field you will display on an outer garmet both your employee ID card and solicitor's permit (if applicable) for the city where you will be interviewing that day. You will also carry at least eight copies of a letter to parents describing the study. You will leave one copy of this letter with each family at the time of the first contact to remind them of the details of the study. The letter will also contain the name and telephone number of the study field supervisor in case a respondent should ask for verification of the study or the sponsoring organization.

The buff-colored Questionnaire Information Sheet enclosed in this manual has been designed to record items relating to the interview. You will prepare one buff-colored sheet for each family you attempt to contact. If the interview is completed you should record the appropriate information on the top of the sheet. The remainder of the sheet can be used to clarify or make notes on specific questions within the questionnaire since no marks of any kind are to be made on the questionnaire other than to blacken the appropriate circles. Insert the buff sheet under the cover page of the questionnaire.

If a questionnaire is not completed, you will note the reason on the buff-colored sheet and then set it aside for a later contact (if no answer or acceptable respondent is not home) or set it aside for no further contact (if no English spoken or respondent doesn't live here anymore). Buff-colored sheets on families with whom no further contact is contemplated should be given to your team leader at your next morning meeting along with the associated index cards.

At the end of each day you will complete a green-colored Interviewer Summary Sheet. In addition to the interviewer's name, the team leader's name, the date, and the study area in which the interviewing was done, this sheet summarizes your day's activities by providing space for you to list the number of questionnaires completed, the number of families contacted who did not complete questionnaires, and the number of callbacks to be made. You will give the completed summary sheet to your team leader at your next morning meeting along with the questionnaires which were completed.

At the Door

When you arrive at a prospective respondent's home, the reaction of the person who answers the door is likely to be a mixture of curiosity and formal courtesy. This initial interest will give you time to establish your identity by introducing yourself and showing your credentials, which will alleviate any fears that you are a salesperson, bill collector, or any other sort of stranger with whom the householder might not wish to speak. The person who answers the door may not be the person you must interview. You should establish a cooperative relationship with whomever answers the door so that you will be able to obtain the information you need to select the respondent.

You will interview the mother or female guardian of the elementary school child or children in the family whenever possible. The mother has been selected as the most desirable respondent because it is felt that she will have the most complete knowledge of all family members in most cases. If the mother cannot be interviewed, or if there is no mother or female guardian living in the home, the next preferred respondent is the father (or male guardian). If neither parent (or guardian) can be interviewed, a grandmother, aunt, grandfather, or uncle (in that order) may be accepted as the respondent, if they reside permanently in the home. Not acceptable as respondents, under any circumstances, are: children of any age, baby sitters, or visiting relatives or other visitors in the home. An alternate respondent should be interviewed only when it has been determined that the mother or female guardian is not going to be available for the interview. Whoever is selected as the respondent must be able to answer the questions for all members of the family.

Your interview should in most cases follow the pattern outlined below.

OUTLINE OF AN INTERVIEW

I. Introduction
   Interviewer introduces herself, presents her credentials and selects the appropriate respondent.

II. Explanation of the Study
   Interviewer gives the respondent a complete verbal explanation of the study and solicits her participation.

III. Statement of Confidentiality
   Interviewer reads the Statement of Confidentiality on Page 3 of the Background Questionnaire or lets the respondent read it herself and then has the respondent sign it.

IV. Completion of Background Questionnaire
   Interviewer completes the questionnaire as directed in the EPA "Instructions for Administering the ARD Study Background Questionnaire."

V. Conclusion
   Interviewer presents the Dear Parent letter, calling the respondent's attention to the attached Question-Answer sheet, and thanks the respondent for her time.

As experienced interviewers are well aware, every interview will not be exactly the same. The interviewer must adapt to the situation she finds in the home and to different respondent characteristics. However, the five points outlined above must be covered and they should follow the sequence shown.

If the respondent has any questions about the study, you should answer them at the time they are asked. However, you should use caution not to give so many details that the respondent becomes bored or overwhelmed with the study. All answers you give or remarks you make should attempt to stimulate the respondent to complete the questionnaire. The respondent should be encouraged but not coaxed or pressured to answer the questions.

Many of the people you will be contacting will ask, "How did you get our address?" Be prepared to answer the question directly and without hesitation. The answer provided in the box below should be used for this purpose. The reason for the answer should be understood. And, the answer should be memorized.

The reason a particular answer must be given is that privacy has become a very sensitive issue. People do not like to have their names, addresses, telephone numbers, or other information about themselves or their families given out. Many have complained to authorities about being contacted by strangers. Others have expressed about what has been done with information collected from them. As a result, the collection and distribution of information on people is now tightly controlled by law. In 1974, Congress passed an act to protect the privacy of individuals. State legislatures passed similar acts and required local authorities such as school districts to prepare guidelines to assure that the requirements of these acts are met.

In California, local school districts cannot distribute information on school families or pupils to anyone unless the guidelines make specific exceptions. Copley International Corporation has been given the addresses of children enrolled in kindergarten through fifth grade in public schools in the four ARD study areas. This information is generally part of what is called "directory information," which is collected from parents at the beginning of each school year. Copley International Corporation has been permitted to receive addresses since CIC is under contract with the Environmental Protection Agency to conduct a study which has been authorized by the U.S. Clean Air Act (federal law 42 U.S.C. 7401 as amended) and which may help to improve the health, education, and welfare of the children.

> "Your address was given to us through your school district. It is part of directory information which can be made available to individuals or organizations engaged in activities permitted under the Family Educational Rights and Privacy Act and the California Educational Code. Your school district has reviewed this study and decided that the release of addresses is warranted."

You should give an explanation during your interview of what is involved in being a panel family and what will be expected of panel families if the respondent agrees to participate. At what point in the interview you give a detailed explanation will depend on the respondent. In most interviews, you will give a general description of symptom reporting when you give an explanation of the complete study (Item II in the "Outline of an Interview") and the finer details including demonstration of the calendar after you ask Question 3, Section I of the Background Questionnaire to those respondents who answer "yes" to Question 3. However, if the respondent asks questions for details at the time you give an explanation of the complete study, answer her questions when she asks them. You will explain the function of the ARD study panel with the following explanation. The respondent of a family selected for participation will be asked to note each day on a symptom reporting form (calendar) any symptoms experienced by each member of the family. If no symptoms are experienced by anyone, the respondent simply places a zero (0) in the space on the calendar for that day. The respondent will also be asked to use a handy form to keep track of how many hours the stove is used each day and how many hours the respondent spends outside her home each day.

When the questionnaire is completed, you will tell the respondent, if she has stated that the family wishes to participate on the ARD panel, that she will be notified by mail as to whether or not she and her family are selected to participate for the year of symptom recording. Tell the respondent that the notices will be mailed to families by early September and that the first telephone calls to families who are selected will begin the second week in September.

Need for Professional Approach

Each interview's promotional ability and a positive explanation of the study are crucial to the success of the study. Therefore you must be professional in your dress, attitude, and explanation of the study in order to complete the maximum number of questionnaires necessary for enrollment of families for panel surveillance. Appropriate attire involves dressing nicely but businesslike. Over-dressing for interviewing is just as inappropriate as appearing too casual.

The most successful interviewer is one who is able to size up the situation quickly on the basis of what little information is available and to act accordingly. Approach each person who answers the door as if he were friendly and interested. Vary your approach in accordance with your intuitive feelings about the person. Some respondents will be quite willing to be interviewed with only a brief explanation of your purpose; for others you will need to go into some detail.

Your own state of mind is often reflected in the respondent's reaction to the request for an interview. If your approach is uncertain or uneasy, if you cannot answer the questions the respondent asks and seem vague about the work and its purposes, this feeling will be communicated to the respondent and she will react accordingly. If you have a pleasant, positive, and well-informed approach, this again will be reflected in the respondent's attitude. Both your effectiveness and your own satisfaction with your work will be increased by the knowledge that the job you are doing is legitimate and important, and by knowing what you are doing and how it should be done.

You should avoid creating the impression that the interview is a quiz or cross-examination; be careful that nothing in your words or manner implies criticism, surprise, approval or disapproval either of the questions you ask or of the respondent's answers.

If you have a normal tone of voice, an attentive way of listening, and a nonjudgmental manner, you will maintain and increase the respondent's interest. Know the questions so well that you can read each one smoothly and move on to the next without any hesitancy. Study the questionnaire carefully and practice reading the questions aloud. Never refer to your instruction manual during an interview.

Ask the questions exactly as they are worded in the questionnaire. Since exactly the same questions must be asked of each respondent, you should not make changes in their phrasing. Although the questions should not be read in a monotone, neither should you emphasize specific words or phrases or add inflection to a sentence which could produce a bias in the respondent's answer.

To minimize the cost of interviewing, it is best to complete an interview on the first visit whenever possible. However, if a respondent refuses an interview because she is too busy to answer the questions, you should suggest coming back at a time more convenient to the interviewee. During the briefing, interviewers will be instructed in preventive techniques for handling potential refusals. Occasionally, however, a respondent will refuse to allow an interviewer to explain the purpose of her visit. When this happens, a note should be made and these addresses should be given to the team leader so that she may call on the prospective respondent in an effort to complete the interview.

You should edit the questionnaires you have completed each day for stray marks and missing data before turning them in to your team leader. This will help to minimize the number of questionnaires which will have to be returned to you for callbacks due to missing observations. Once questionnaires are given to the team leaders, they will be carefully edited again for interviewer errors and missing data. Interviewers will be required to make callbacks for answers to questions they failed to get during the first interview. As with all surveys, 10 percent of all interviews will be validated by non-interviewing personnel every week.

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June 25
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Upland/Ontario 29
West Los Angeles/Santa Monica 30

ADMINISTRATION

COPLEY INTERNATIONAL CORPORATION

Economic Research • Marketing Research • Environmental Research • Management Services

Dear Parent:

Thank you for participating in your community's study by answering the survey questions. If you have agreed to help further by reporting symptoms beginning in the Fall and your family is selected for it, we will contact you early in September.

A question-answer sheet is stapled to this letter for you to refer to. It summarizes the main points about the study that our interviewer discussed with you.

We appreciate the help you have already given us.

Sincerely,

R. David Flesh

R. David Flesh
Project Director

RDF:jld

[illegible]
[illegible]

QUESTIONS & ANSWERS ABOUT THE ARD STUDY

Questions	Answers
What is the study?	It's a study of environmental pollutants that may affect your family's health.
How will it be conducted?	In two parts. First, a Survey and then Reporting of Symptoms.
What is the Survey?	We are conducting the survey now. School families in your community are being asked for answers to questions about possible exposure to environmental factors in the home, on the way to work, and at the job. Also, there are some questions about your family's health and general ones about family members. The answers to the survey questions will permit us to judge the exposure most school families experience and to select those that will enable us to identify pollutants that affect family health.
What is Symptom Reporting?	If your family is selected for this vital part of the study, we will send you a calendar in September to record illness symptoms of family members over a 12-month period. Once a week during this time an interviewer will phone you to discuss the health of all family members during the previous week. She will also ask about the number of hours your kitchen stove was used and the number of hours you spent outdoors. The answers to these weekly questions will be grouped and evaluated in relation to pollution exposure measurements that we will be recording every day in your community.
Who is taking part in the study?	All families with elementary school children living in your neighborhood that we are able to contact are being asked to answer the survey questions. About 350 families will be chosen for the symptom reporting. They will be selected by the answers given to the survey questions so that the groups in each of the four communities match.
Where is the study being conducted?	In portions of West Los Angeles/Santa Monica, Garden Grove/Westminster, Glendora/Covina, and Upland/Ontario.
What about our privacy?	The study is subject to regulations of the 1974 Privacy Act. There will be no permanent recording on computers of the names of families or family members. Answers to questions will be grouped and analyzed by groups.
Who is conducting it?	Copley International Corporation and the University of California, Riverside, for the U.S. Environmental Protection Agency.
What is the authority for it?	The United States Clean Air Act (42 U.S.C. [illegible] as amended).
Who can I call if I have any questions?	Call Mrs. Nancy [illegible], Field Supervisor, at Copley International Corporation's Garden Grove office: (area code [illegible]) [illegible].

INTERVIEWER SUMMARY SHEET

Interviewer: ______________________________ Date: ________________

Team Leader: ________________________ Community: ________________

WRITE THE APPROPRIATE NUMBERS IN THE COLUMNS ON THE LEFT.

_____ Questionnaires completed:

Name of Head of Household	Ques. No.	Time In	Time Out

_____ Residence is not single family dwelling

_____ Refused

_____ Appointments made for later callbacks

_____ No answer (unscheduled callbacks to be made at a later date)

_____ TOTAL CONTACTS ATTEMPTED TODAY (Total of 5 categories above)

_____ Total hours spent in field today (including time spent traveling)

Comments: ____

11 x 8½" SPIRAL
C2 Cover and Pack - Jan. - Dec.
C2-16 Cover and Back - Sept. - Dec.
C14 Spiral Refill
Punched 3 Hole - Sept. - Dec.

MAY 1978

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	2	3	4	5	6
7	8	9	10	11	12	13
14 MOTHER'S DAY	15	16	17	18 Briefing	19 Briefing	20
21	22 West Los Angeles	23 Garden Grove	24 Glendora	25 Upland	26 West Los Angeles	27
28	29 MEMORIAL DAY OFF	30 OFF	31 Garden Grove	1978 APRIL 1978	1978 JUNE 1978	MAY

1978 APRIL 1978

SUN	MON	TUE	WED	THUR	FRI	SAT
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23/30	24	25	26	27	28	29

1978 JUNE 1978

SUN	MON	TUE	WED	THUR	FRI	SAT
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

[illegible]

11 x 8½" SPIRAL
C3 Cover and Back - Jan. - Dec.
C3-16 Cover and Back - Sept. - Dec.
C16 Spiral Bold
Punched 3 Hole - Sept. - Dec.

JUNE 1978

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
[illegible]	[illegible]			**1** Glendora	**2** Upland	**3**
4	**5** West Los Angeles	**6** Garden Grove	**7** Glendora	**8** Upland	**9** West Los Angeles	**10**
11	**12** Garden Grove	**13** Glendora	**14** Upland	**15** West Los Angeles	**16** Garden Grove	**17**
18 FATHER'S DAY	**19** Glendora	**20** Upland	**21** West Los Angeles	**22** Garden Grove	**23** Glendora	**24** ST.JOHN THE BAPTIST DA
25 [illegible]	**26** Upland	**27** West Los Angeles	**28** Garden Grove	**29** Glendora	**30** Upland	JULY 1

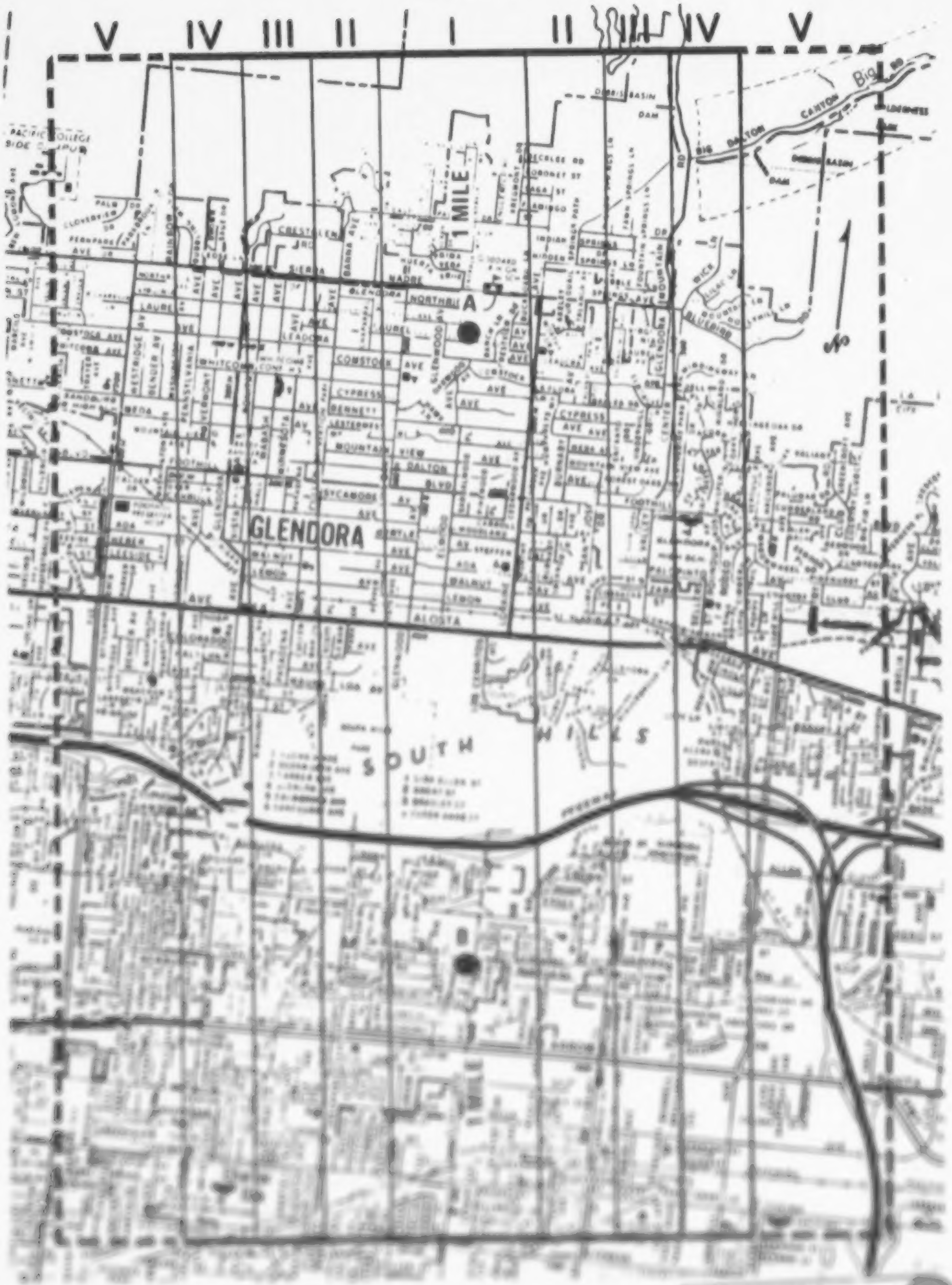
11 x 8½" SPIRAL
C2 Cover and Back - Jan. - Dec.
C2-16 Cover and Back - Sept. - Dec.
C14 Spiral Refill
Punched 3 Hole - Sept. - Dec.

JULY 1978

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
						1 CANADIAN CONFEDERATION DAY
2	3	4 INDEPENDENCE DAY	5 West Los Angeles	6 Garden Grove	7 Glendora	8
9	10 Upland	11 West Los Angeles	12 Garden Grove	13 Glendora	14 Upland	15
16	17 West Los Angeles	18 Garden Grove	19 Glendora	20 Upland	21 West Los Angeles	22
23/30	24/31 Garden Grove/ Glendora	25 Glendora AUGUST 1 Upland	26 Upland	27 West Los Angeles	28 Garden Grove	29

JULY

GLENDORA

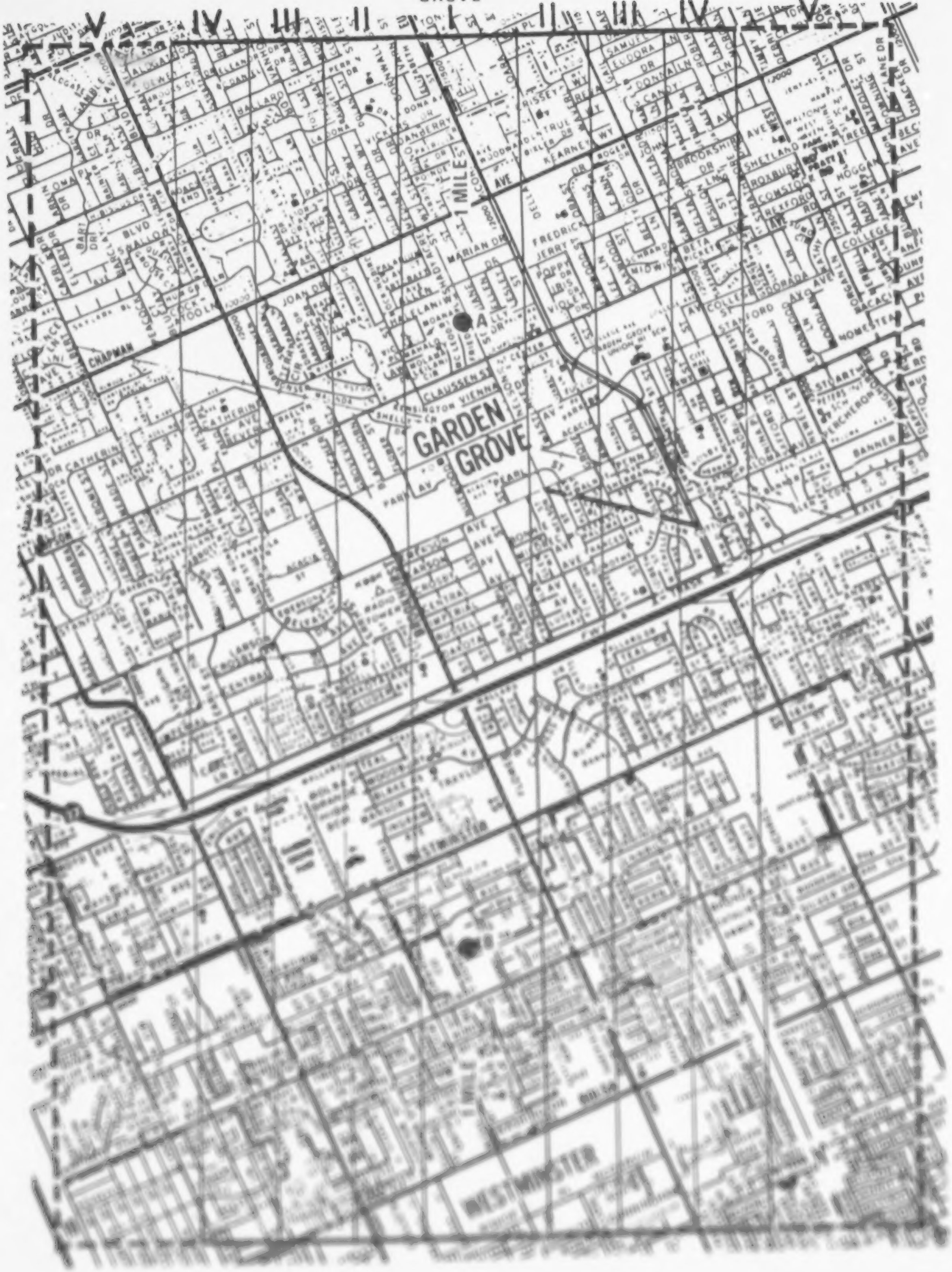


A = LEADORA AT DALTON WASH

B = SUNFLOWER ELEMENTARY SCHOOL

Reproduced from best available copy.

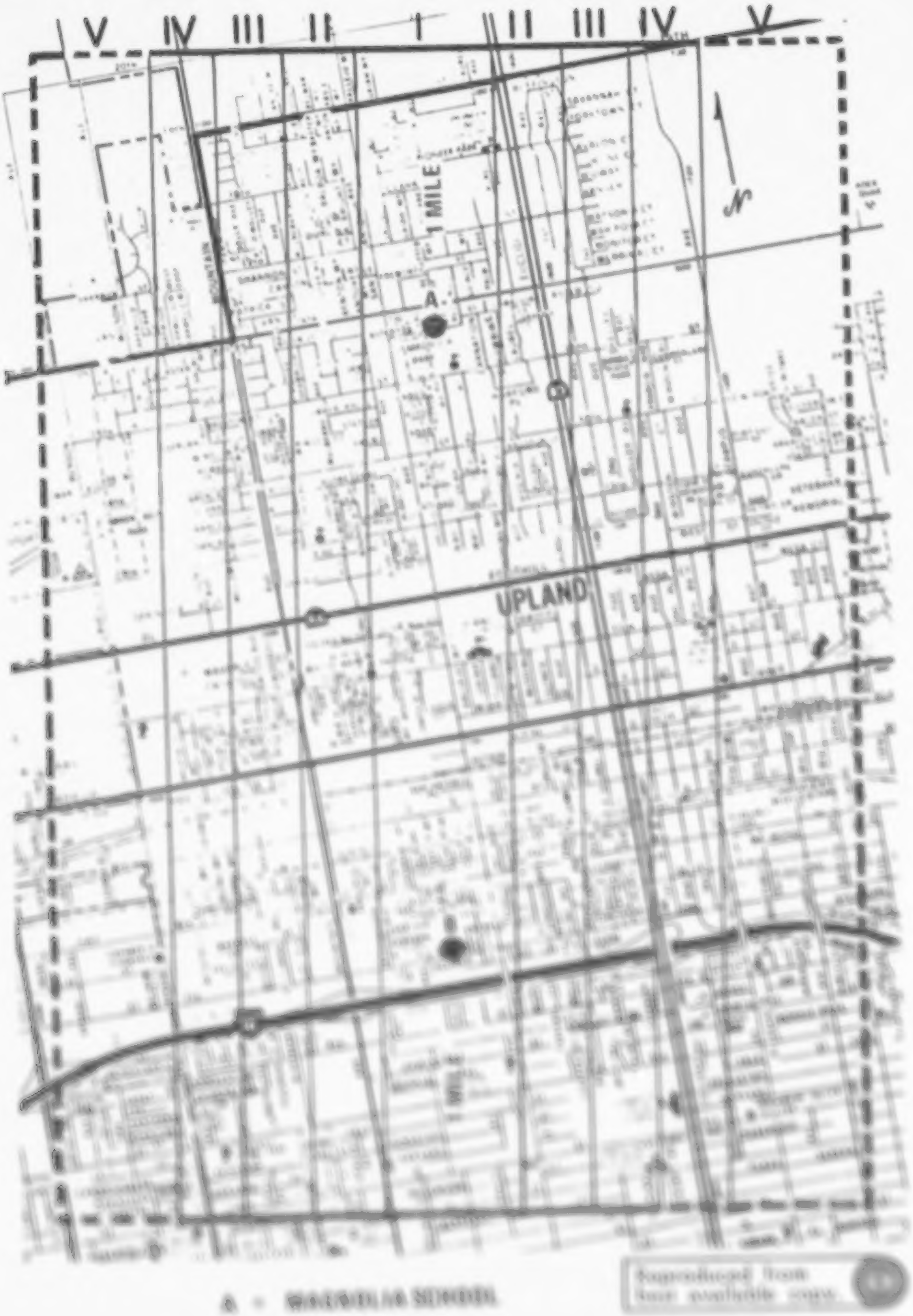
GARDEN
GROVE



A = EVANS SCHOOL

B = HILL SCHOOL

UPLAND

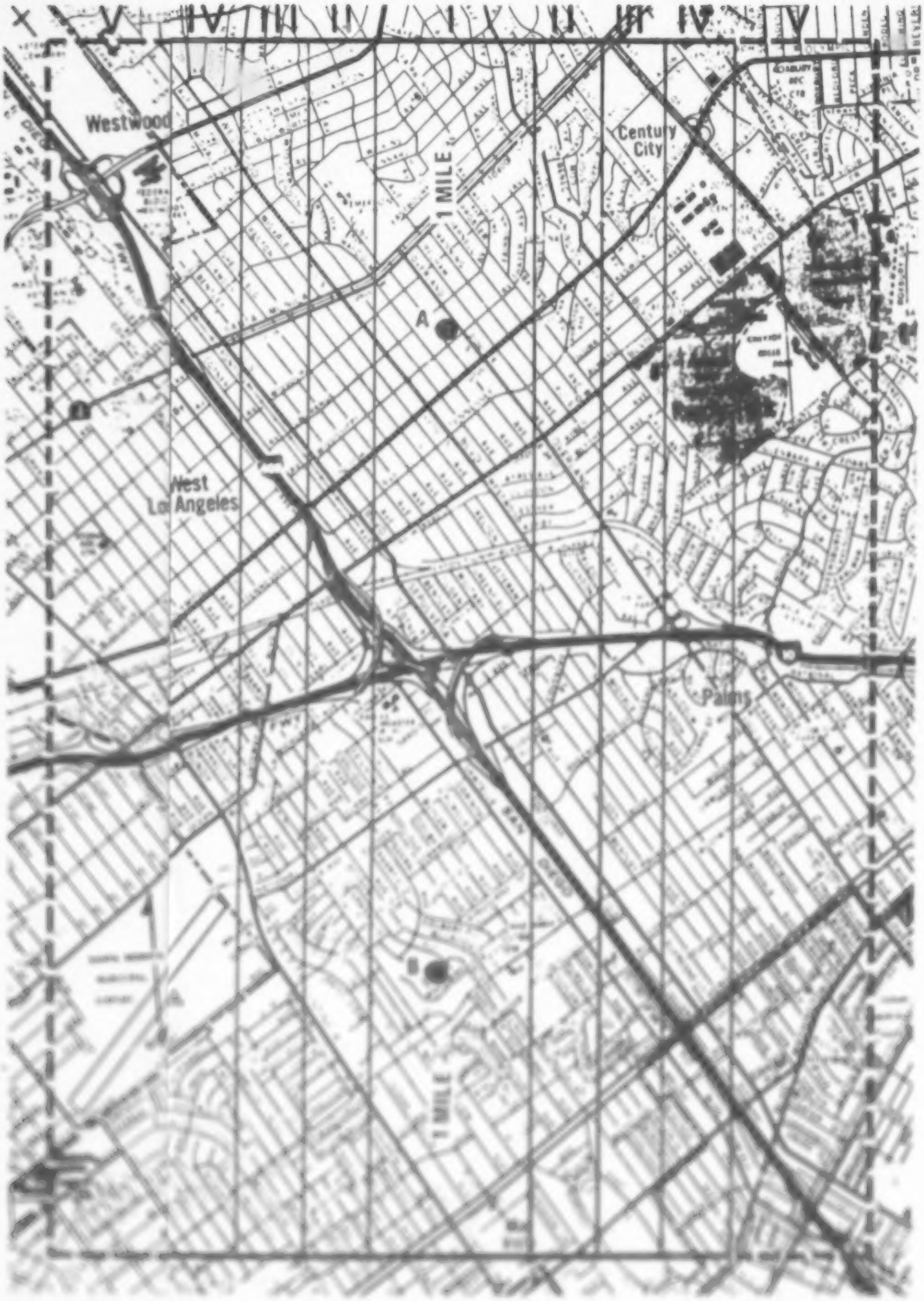


A = MAGNOLIA SCHOOL

B = CITRUS SCHOOL

Reproduced from best available copy.

WEST LOS ANGELES



A = WESTWOOD SCHOOL

B = MAR VISTA SCHOOL

Appendix C

BACKGROUND STUDY QUESTIONNAIRE AND INSTRUCTIONS

OMB NO.: 158-S77012
Expires: September, 1980

ARD STUDY

BACKGROUND QUESTIONNAIRE

003812

NAME OF HEAD OF HOUSEHOLD ______________________________
First Name Last Name
2
(12)

STREET ______________________________
(13-36)

CITY ______________________________
(38-60)

ZIP CODE ____________
(61-65)

TELEPHONE ______________________________
[illegible]

DO NOT WRITE HERE

FOR OFFICE USE ONLY
____
[illegible]

NCS Trans-Optic F5064-54321

STATEMENT OF CONFIDENTIALITY

THE PURPOSE OF THIS SURVEY IS TO OBTAIN INFORMATION WHICH WILL BE USED SOLELY FOR MEDICAL RESEARCH INTO THE EFFECTS OF ENVIRONMENTAL FACTORS ON PUBLIC HEALTH. THIS WORK IS BEING CONDUCTED FOR THE U. S. ENVIRONMENTAL PROTECTION AGENCY.

THE INFORMATION RECEIVED FROM YOU WILL BE HELD IN STRICT CONFIDENCE. ALL RESULTS WILL BE SUMMARIZED FOR GROUPS OF PEOPLE. NO INFORMATION ABOUT INDIVIDUAL PERSONS WILL BE RELEASED.

THE QUESTIONNAIRES USED IN THIS SURVEY ARE AUTHORIZED BY LAW (42 U.S.C. 7401 AS AMENDED). WHILE YOU ARE NOT REQUIRED TO RESPOND, YOUR COOPERATION IS NEEDED TO MAKE THE RESULTS OF THIS SURVEY COMPREHENSIVE, ACCURATE, AND TIMELY. FAILURE TO PARTICIPATE OR FAILURE TO COMPLETE THE STUDY ONCE ENROLLED WILL CARRY NO PENALTY.

I HAVE READ AND UNDERSTAND THE STATEMENT ABOVE.

Date *Signature of Respondent*

STATEMENT OF CONFIDENTIALITY

THE PURPOSE OF THIS SURVEY IS TO OBTAIN INFORMATION WHICH WILL BE USED SOLELY FOR MEDICAL RESEARCH INTO THE EFFECTS OF ENVIRONMENTAL FACTORS ON PUBLIC HEALTH. THIS WORK IS BEING CONDUCTED FOR THE U. S. ENVIRONMENTAL PROTECTION AGENCY.

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I HAVE READ AND UNDERSTAND THE STATEMENT ABOVE.

______________	______________________________
Date	*Signature of Respondent*

I. GENERAL QUESTIONS ABOUT THE HOUSEHOLD

1. HOW LONG HAS YOUR FAMILY LIVED AT YOUR PRESENT ADDRESS?

① < 1 YEAR	④ 3 YEARS	⑦ 6 YEARS	⑩ 9 YEARS	⑬ 12 YEARS OR MORE
② 1 YEAR	⑤ 4 YEARS	⑧ 7 YEARS	⑪ 10 YEARS	
③ 2 YEARS	⑥ 5 YEARS	⑨ 8 YEARS	⑫ 11 YEARS	

2. DO YOU PLAN TO MOVE DURING THE NEXT TWELVE MONTHS?

① NO ② YES

3. IF SELECTED, WILL YOUR FAMILY PARTICIPATE AS MEMBERS OF THE ARD PANEL?

① NO ② YES ③ YES, BUT UNCERTAIN

	MOTHER (OR FEMALE GUARDIAN)	FATHER (OR MALE GUARDIAN)
4. IF YOU MOVED TO YOUR PRESENT CITY OR TOWN WITHIN THE PAST THREE YEARS, WHERE DID YOU MOVE FROM?	______ ______	______ ______
A CITY OF OVER 200,000 PEOPLE	①	①
A TOWN OR CITY OF UNDER 200,000 PEOPLE	②	②
5. WHAT IS THE LARGEST CITY IN WHICH YOU HAVE LIVED FOR THREE OR MORE YEARS?	______ ______	______ ______
WAS THIS CITY OVER 200,000 PEOPLE?	① NO ② YES	① NO ② YES
6. WHAT IS THE HIGHEST EDUCATIONAL LEVEL THAT YOU HAVE COMPLETED? (MARK ONLY THE HIGHEST.)		
ELEMENTARY SCHOOL	①	①
HIGH SCHOOL GRADUATE	②	②
TRADE, TECHNICAL OR BUSINESS SCHOOL BEYOND HIGH SCHOOL	③	③
TWO-YEAR COLLEGE DEGREE	④	④
FOUR-YEAR COLLEGE DEGREE	⑤	⑤
POST-GRADUATE DEGREE BEYOND BACHELORS DEGREE	⑥	⑥

7. WHICH ONE OF THE FOLLOWING BEST DESCRIBES YOUR FAMILY? (IF TWO OR MORE CATEGORIES APPLY, MARK OTHER.)

① HISPANIC
② BLACK, NOT HISPANIC ORIGIN
③ ASIAN OR PACIFIC ISLANDER
④ AMERICAN INDIAN OR ALASKAN NATIVE
⑤ WHITE, NOT HISPANIC ORIGIN
⑥ OTHER, INCLUDE MIXED

TM

II. EXPOSURE AND MOBILITY QUESTIONS

1. MARK THE RESPONSE THAT BEST DESCRIBES YOUR HOME.

	ONE FLOOR BUILDING	TWO (OR MORE) FLOOR BUILDING
ONE FAMILY UNIT	①	④
TWO FAMILY UNITS	②	⑤
THREE OR MORE FAMILY UNITS	③	⑥

2. HOW OLD IS YOUR HOME?

① LESS THAN 1 YEAR
② 1 TO 5 YEARS
③ 6 TO 10 YEARS
④ 11 TO 15 YEARS
⑤ 16 TO 20 YEARS
⑥ MORE THAN 20 YEARS

3. HOW MANY ROOMS ARE THERE IN YOUR LIVING QUARTERS? (DO NOT COUNT BATHROOMS, PORCHES, BALCONIES, FOYERS, HALLS, OR HALF ROOMS)

① ONE
② TWO
③ THREE
④ FOUR
⑤ FIVE
⑥ SIX
⑦ SEVEN
⑧ EIGHT
⑨ NINE OR MORE

4. MARK THE APPROPRIATE RESPONSE FOR THE FUEL YOU USE TO OPERATE THE HOUSEHOLD EQUIPMENT LISTED.

	HOME HEATING EQUIPMENT	WATER HEATING EQUIPMENT	INDOOR COOKING EQUIPMENT	OUTDOOR COOKING EQUIPMENT
GAS	①	①	①	①
ELECTRIC	②	②	②	②
OTHER	③	③	③	③

5. WHICH TYPE OF HEATING SYSTEM DO YOU USE IN YOUR HOME?

① CENTRAL GAS

② VENTED INDIVIDUAL ROOM GAS HEATER

③ UNVENTED INDIVIDUAL ROOM GAS HEATER

④ HEATING SYSTEM OTHER THAN GAS

6. DO YOU USE A FIREPLACE IN YOUR HOME?

① NO

② YES, ELECTRIC LOGS

③ YES, GAS LOGS

④ YES, WOOD BURNING

⑤ YES, WOOD BURNING HEATER

⑥ YES, COAL BURNING

7. DO YOU USE AIR CONDITIONING IN YOUR HOME?

① NO

② YES, CENTRAL

③ YES, WINDOW ONLY

④ OTHER ______________________________ (SPECIFY)

8. DO YOU USE AN ELECTROSTATIC PRECIPITATOR IN YOUR HOME?

① NO

② YES, CENTRAL

③ YES, ROOM ONLY

④ DON'T KNOW

9. DO YOU HAVE A GARAGE ATTACHED TO YOUR HOUSE?
(ANSWER "YES" ONLY IF GARAGE IS USED FOR STORING AN AUTOMOBILE.
DO NOT COUNT CARPORTS.)

① NO

② YES, USED TO STORE ONE CAR

③ YES, USED TO STORE TWO CARS

④ YES, USED TO STORE THREE OR MORE CARS

PLEASE DO NOT
MAKE ANY MARKS
IN THIS AREA

	MOTHER (OR FEMALE GUARDIAN)		FATHER (OR MALE GUARDIAN)	
10. ARE YOU EMPLOYED AT A JOB OTHER THAN A JOB YOU WORK AT WITHIN YOUR OWN HOME? **IF YOU ANSWERED "YES" TO QUESTION 10, PLEASE ANSWER QUESTIONS 10a THROUGH 10h.**	① NO ② YES		① NO ② YES	
10.a. AT YOUR JOB DO YOU WORK:	INDOORS	OUTDOORS	INDOORS	OUTDOORS
	① SHOP ② OFFICE ③ FACTORY ④ OTHER	① STATIONARY ② MOBILE ③ OTHER	① SHOP ② OFFICE ③ FACTORY ④ OTHER	① STATIONARY ② MOBILE ③ OTHER
10.b. HOW DO YOU USUALLY GET TO WORK?	① AUTOMOBILE ② BUS ③ OTHER PUBLIC TRANSPORT ④ WALK ⑤ OTHER ________ (SPECIFY)		① AUTOMOBILE ② BUS ③ OTHER PUBLIC TRANSPORT ④ WALK ⑤ OTHER ________ (SPECIFY)	
10.c. HOW LONG DOES IT TAKE YOU TO GET TO WORK?	① LESS THAN ¼ HOUR ② ¼ TO ½ HOUR ③ ½ TO 1 HOUR ④ MORE THAN 1 HOUR		① LESS THAN ¼ HOUR ② ¼ TO ½ HOUR ③ ½ TO 1 HOUR ④ MORE THAN 1 HOUR	
10.d. DO YOU TRAVEL PREDOMINATELY (50% OR MORE TRIP TIME) ON ROADS WITH 6 OR MORE LANES?	① NO ② YES		① NO ② YES	
10.e. WHAT DAYS OF THE WEEK DO YOU USUALLY WORK?	① MONDAY THRU FRIDAY ② MONDAY THRU SATURDAY ③ OTHER ________ (SPECIFY)		① MONDAY THRU FRIDAY ② MONDAY THRU SATURDAY ③ OTHER ________ (SPECIFY)	
10.f. HOW MANY HOURS A DAY DO YOU USUALLY WORK?	① LESS THAN 4 HOURS ② 4 TO 6 HOURS ③ 6 TO 8 HOURS ④ MORE THAN 8 HOURS		① LESS THAN 4 HOURS ② 4 TO 6 HOURS ③ 6 TO 8 HOURS ④ MORE THAN 8 HOURS	
10.g. WHAT TIME OF DAY DO YOU USUALLY START WORK?	① 7 AM TO 10 AM ② 10 AM TO 1 PM ③ 1 PM TO 4 PM ④ 4 PM TO 7 PM ⑤ 7 PM TO 7 AM		① 7 AM TO 10 AM ② 10 AM TO 1 PM ③ 1 PM TO 4 PM ④ 4 PM TO 7 PM ⑤ 7 PM TO 7 AM	
10.h. WHAT IS THE ADDRESS OF YOUR PLACE OF WORK?	________ ________ OFFICE USE ONLY ⓪①②③④⑤⑥⑦⑧⑨ ⓪①②③④⑤⑥⑦⑧⑨		________ ________ OFFICE USE ONLY ⓪①②③④⑤⑥⑦⑧⑨ ⓪①②③④⑤⑥⑦⑧⑨	

○ P ○ 1 ○ 8 ○ 4 ○ 2 ○ 1 ○ 8 ○ 4 ○ 2 ○ 1 ○ 8 ○ 4 ○ 2 ○ 1 ○ 8 ○ 4 ○ 2 ○ 1 ○ 8 ○ 4 ○ 2 ○ 1

	MOTHER (OR FEMALE GUARDIAN)	FATHER (OR MALE GUARDIAN)
11. AT ANY JOB, PAST OR PRESENT, ARE YOU NOW OR HAVE YOU BEEN FREQUENTLY EXPOSED TO IRRITATING SMOKE, DUST, OR FUMES? **IF YOU ANSWERED "YES" TO QUESTION 11, PLEASE ANSWER QUESTIONS 11a AND 11b.**	① NO ② YES	① NO ② YES
11.a. HOW LONG WERE YOU EXPOSED?	① LESS THAN 1 YEAR ② 1 TO 5 YEARS ③ 6 TO 10 YEARS ④ MORE THAN 10 YEARS	① LESS THAN 1 YEAR ② 1 TO 5 YEARS ③ 6 TO 10 YEARS ④ MORE THAN 10 YEARS
11.b. WHAT KIND OF IRRITANT WERE YOU EXPOSED TO? FOR EXAMPLE: ASBESTOS, COAL DUST, SMELTER FUMES, RAW COTTON DUST, FOUNDRY DUST	__________ __________ __________	__________ __________ __________
PLEASE DO NOT MAKE ANY MARKS IN THIS AREA		
	OFFICE USE ONLY Ⓨ Ⓝ (NC)	OFFICE USE ONLY Ⓨ Ⓝ (NC)

III. GENERAL QUESTIONS ABOUT THE HOUSEHOLD MEMBERS

PLEASE PROVIDE THE INFORMATION REQUESTED ON THIS AND THE FOLLOWING PAGE FOR EACH PERSON LIVING IN THE HOUSEHOLD.

1 WRITE IN THE COLUMN BELOW THE FIRST AND MIDDLE NAME OF EACH PERSON LIVING IN THE HOUSEHOLD. WRITE LAST NAME FOR THE PERSONS WHOSE LAST NAME IS DIFFERENT FROM THAT ON THE COVER OF THE QUESTIONNAIRE.	2 MONTH AND YEAR OF BIRTH		3 SEX		4 POSITION IN HOUSEHOLD				5 WHICH OF THE FOLLOWING CHRONIC DISEASES HAVE BEEN DIAGNOSED FOR THIS PERSON?				
NAME (11-12) (14-34)	MONTH (35-36)	YEAR (37-40)	MALE	FEMALE	FATHER	MOTHER	CHILD	OTHER	NONE	CHRONIC HEART DISEASE	INACTIVE ASTHMA	ACTIVE ASTHMA	CHRONIC LUNG DISEASE OTHER THAN ASTHMA
01	☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①
02	☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①
03	☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①
04	☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①
05	☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①
06	☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①
07	☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①
08	☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①
09	☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①
10	☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①
11	☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①
12	☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①
13	☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①
14	☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①
15	☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①

THANK YOU FOR YOUR HELP AND COOPERATION

6 DOES THIS PERSON SMOKE A PIPE OR CIGAR ON MOST DAYS?		7 HAS THIS PERSON SMOKED A TOTAL OF MORE THAN 100 CIGARETTES DURING HIS OR HER ENTIRE LIFE?			8 DOES THIS PERSON SMOKE CIGARETTES NOW?			9 IF THIS PERSON IS A CURRENT OR AN EX-CIGARETTE SMOKER, HOW MANY CIGARETTES DOES (DID) HE/SHE SMOKE PER DAY?				10 IF THIS PERSON IS A CURRENT OR AN EX-CIGARETTE SMOKER HOW OLD WAS HE/SHE WHEN HE/SHE FIRST STARTED SMOKING REGULARLY?	11 IF THIS PERSON IS AN EX-CIGARETTE SMOKER, HOW HOW OLD WAS HE/SHE WHEN HE/SHE LAST GAVE UP SMOKING REGULARLY?
NO	YES	NO	YES	DON'T KNOW	NO	YES	DON'T KNOW	10 OR LESS	ABOUT 20	ABOUT 30	40 OR MORE	AGE IN YEARS (41-42)	AGE IN YEARS (43-44)
①	②	①	②	③	①	②	③	①	②	③	④	☐☐	☐☐
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INTERVIEWER

CODE ☐☐

⓪	⓪
①	①
②	②
③	③
④	④
⑤	⑤
⑥	⑥
⑦	⑦
⑧	⑧
⑨	⑨

DATE OF INTERVIEW

MO DAY ☐☐☐☐

MO		DAY	
⓪	⓪	⓪	⓪
①	①	①	①
	②	②	②
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	⑤		⑤
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	⑦		⑦
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	⑨		⑨

OFFICE USE ONLY

RESPONDENT

⓪	⓪
①	①
②	②
③	③
④	④
⑤	⑤
⑥	⑥
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⑧	⑧
⑨	⑨

AREA COMMUNITY

⓪	⓪	⓪	⓪
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⑤	⑤	⑤	⑤
⑥	⑥	⑥	⑥
⑦	⑦	⑦	⑦
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⑨	⑨	⑨	⑨

PLEASE
DO NOT MAKE
ANY MARKS
ON THIS PAGE

INSTRUCTIONS FOR ADMINISTERING

THE ARD STUDY BACKGROUND QUESTIONNAIRE
(OMB No. 158 S77012)

Written by

Dorothy C. Calafiore, Dr.P.H.

Question Interpretation

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April 1, 1978

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INTRODUCTION

You are one of a team of interviewers who will initiate a fairly large-scale study to be conducted during the next twelve to fifteen months. This study, called "The Acute Respiratory Disease Study" (ARD Study), will be done in two stages. The first stage, which you are now beginning, will be a survey of families in each of four selected communities to collect health, personal, and family data by means of an interviewer-administered questionnaire. The second stage of the study will consist of surveillance of the members of approximately 350 families selected from those interviewed to record the frequency and severity of acute respiratory disease symptoms.

For the first stage of the study you will administer the "ARD Study Background Questionnaire". The information you record in this questionnaire will be used first to select the families for the second stage (the surveillance of symptoms) and, for those families selected, to consider factors that influence the occurrence and severity of acute respiratory disease. Thus, each interview you conduct will be vital; your accuracy and preciseness in recording respondents' answers will impact upon the eventual outcome of the entire study.

RESPONDENTS

The mother or female guardian is the preferred respondent for the background questionnaire. In the majority of families she is usually the family member who can most accurately answer the questions for all members of the family, especially for her preschoolers and school children. Whenever possible you should ask her to serve as the respondent.

If the mother cannot be interviewed, the next preferred respondent is the father or male guardian. If neither parent can be interviewed, one of the following who resides permanently in the home may be asked to respond: a grandmother, aunt, grandfather, or uncle (in that order).

Not acceptable as respondents are: children of any age, baby sitters, or occasional visiting relatives and other visitors in the home.

Whoever is selected as the respondent should answer the questions for all members of the family and must be able to speak and understand English.

PRELIMINARY EXPLANATION OF THE STUDY

A full verbal explanation of the study must precede any attempt to complete the ARD Study Background Questionnaire. After you have given this explanation, ask for and answer any questions that the respondent may have about the study. You will be given a supply of a printed Question-Answer Sheet and Dear Parent letter to be distributed to the families you interview who supply answers needed to complete the Background Questionnaire. The letter and Question-Answer sheet should be left with the respondent.

When the respondent has no further questions, ask if he/she will answer the questions included in the Background Questionnaire. Explain that some of these questions are general ones about the household and others concern individual family members. Some respondents may refuse to participate in the surveillance phase but would be willing to give information needed for the Background Questionnaire. Therefore, when a respondent refuses, ask if he/she will at least participate to the extent of giving information needed for the Background Questionnaire. Explain that this information is needed when the study data are analyzed to ascertain that those who participate in the surveillance phase represent the whole community of school families. If the respondent is reluctant to answer the questions, do not coerce or use undue pressure in attempting to change his/her mind, but use gentle persuasion. Emphasize the importance of the study and stress the relatively short time needed to complete the questionnaire. If your efforts fail, including a denial that there is another more convenient time when the respondent will agree to answer the questions, write in the top margin of the questionnaire face page "refused" and the reason for the refusal.

QUESTIONNAIRE USE

Complete one questionnaire for each family you interview. A family is defined as a group of people living together in a single dwelling unit, i.e. the group shares common living room, bath (or baths), and cooking facilities. Usually a family will consist of one or two parents and their children. There will be exceptions, however. For example, the family might consist of father, mother and their children, plus the spouse of one of their children and the children of the younger couple. Or, a family might consist of two couples of the same age group and their children living together in a single dwelling unit. These and similar exceptions would also be considered a family.

If there are two or more families living in the same building, each family having its own living room, bath (or baths), and cooking facilities, complete one questionnaire for each family.

Before beginning to ask the respondent for information to be entered in the questionnaire, open it to page 3 and explain that the statement which is printed on page 3 is a "Statement of Confidentiality". It is required for any study conducted by or for the federal government and is included for the protection of respondents. Read the statement with the respondent. If the respondent asks to what does "42 U.S.C. 7401" refer in the third paragraph, explain that this is the new U.S. code number assigned August 7, 1977 to the "Clean Air Act" enacted by the Congress of the United States. Ask the respondent to sign the statement to show that he/she read and understood it. No data is to be recorded in the questionnaire before the statement has been signed. If the respondent wishes to know what questions will be asked before signing it, give the questionnaire to him/her and allow sufficient time for a detailed personal examination of each question.

Before the respondent signs the "Statement of Confidentiality", specify that the signature should consist of the respondent's own first and middle name, and his/her own or the family surname. This is very important because respondents will be coded for later analysis to determine whether differences found might be due to different kinds of respondents. The appropriate respondent code will be selected by comparing the signature on page 3 with the names listed in Section III of the questionnaire. For example, Mary Ellen Jones signs the statement; in Section III Mary Ellen appears as the mother; thus, the respondent code for "mother" is selected.

After the "Statement of Confidentiality" is signed, start with the Face Page of the questionnaire and ask the questions in the order in which they are printed. Do not reverse the sections or skip questions and later go back to them. Briefly introduce each section of the questionnaire before you begin the questions included in that section.

After you have completed the last section, check each page to be certain that you have entered answers to all questions. It is very costly and sometimes impossible to return later for missing data. Do this checking before you leave the home; do not get into a habit of checking after you leave. It will be embarrassing to you and annoying to the respondent if you approach him/her again, even within a few minutes, for the same purpose. Your completed questionnaires will be edited for errors and missing or unclear answers, but it is expected that such errors and omissions may occur only infrequently. When they do, the interviewer who made the contact will be required to obtain promptly any missing answers or to clarify unclear or erroneous answers.

A 10% sample of all interviews will be validated routinely to determine if the interviewers actually completed face-to-face interviews with the persons named as respondents on the questionnaires. The validation interviews will also be used to measure the accuracy and reliability of the data obtained. The validation interviews will be conducted by trained project personnel other than assigned field interviewers. Appropriate additional instruction will be given to interviewers if the need to do so is indicated by validating their work.

Read each question to the respondent as it is printed in the questionnaire. If the respondent (by giving an inappropriate answer, by looking puzzled, or by some other means) shows that he/she does not understand a question, rephrase it in your own words in accordance with the instructions given for each question in the last section of these instructions. If it is necessary to rephrase a question, answer a respondent question, or probe for an answer, do so in a way that will not suggest to the respondent what the answer should be. In other words, avoid rephrasing the question so that it becomes a "leading question". Any statement made by the interviewer which leads or directs the respondent to make a particular response could introduce bias and could affect the validity of the survey as well as the validity of phase 2 of the study.

Print clearly any information that you write in the questionnaire. Enter any numbers distinctly so that they cannot be confused with other numbers.

Memorize the instructions for each question given in the last section of these instructions before you start to interview and, if necessary, refer to them only between interviews. You should know the instructions for each question well enough so that it is not necessary to refer to them during interviews.

QUESTIONNAIRE DESIGN

The ARD Study Background Questionnaire is an 11-page booklet comprising a Face Page, a Statement of Confidentiality, General Questions about the Household (Section I), Exposure and Mobility Questions (Section II), and General Questions about the Household Members (Section III).

It is an optical scan type form. Thus, it is printed on special paper and in a special format so that the answers you enter can be read mechanically on an optical scanner. The scanner "reads" the answers by electronic sensors and creates a magnetic tape of the answers which is then used to prepare computerized files for data analysis.

The scanner reads only carbon marks. Therefore, it is absolutely essential that you enter answers in pencil only. If by mistake you use a pen or anything other than a pencil, go over such marks with a pencil.

The scanner reads any pencil marks, made intentionally or by chance, that appear in the circles provided for answers to the questions. Therefore, you must be very careful to avoid making marks anywhere on the form except within the answer circles. If by accident you make marks or enter answers which must be changed, you must be certain to erase them completely.

The scanner reads through the paper. Therefore, a mark on one side that is not within an answer circle but crosses an answer circle on the reverse side of the paper will be read as an answer to the question on the reverse side. Thus, you must completely remove any mark not intended as an answer to a question.

Use only the pencils furnished to you for completing the questionnaires. Darken the circles well so that they can be seen clearly by the person who will edit your completed questionnaires. Fill the entire answer circle completely with your pencil; do not enter an "x", or check mark, or a dot in the center of the circle.

Examine the sample questionnaire which is furnished with these instructions. If you open it to pages 6 and 7 (the center), you will see that it is composed of three large sheets of paper measuring 11" by 17" and held together by wire staples. When the completed questionnaires are processed, the wire staples are removed, the loose sheets are stacked in a holding tray on the optical scanner, from which each sheet is fed mechanically into the scanner.

It is important to know that the feeding device works perfectly if the questionnaires are in good condition after field use. If the questionnaires have been torn or creased, the edges of the pages rolled or bent, the machine reading operation bogs down and a great deal of time is wasted and possible errors in data are introduced when sheets torn up in the machine have to be recopied by hand and machine adjustments must be made. If a questionnaire is inadvertently damaged, it should be copied over before it is turned in to the field supervisor at the end of the day's work.

Preventive care is essential. Paper clips, which when removed sometimes leave rolled or torn edges on the paper, should not be used. Rubber bands placed around several forms also can tear or roll edges of the sheets as they are removed. Stapling pages that are to be scanned should never be permitted; they always leave holes in the paper and may result in tearing of the paper. When forms are in field use, they should be kept in the folders in which they are furnished for each day's work, with only one questionnaire removed from the folder while the interviewer is completing it, and immediately returned to the folder after it is completed.

Beginning on the next page (p.8) and on the remaining pages of these instructions are directions for each question contained in the ARD Study Background Questionnaire. The set of questions for each section of the questionnaire is preceded by a page which identifies the section and contains an "Introduction" which interviewers may use to introduce the section to respondents.

FACE PAGE

Introduction

In a study of this type where several thousands of questionnaires are completed, each questionnaire must be carefully reviewed for completeness and accuracy before it is machine processed. Therefore, it is necessary to record certain identifying information on the cover so that, if necessary, families can be revisited or telephoned to correct errors or to clarify items that may be confusing to the reviewer.

When the data are sent for processing, no names or identifying information will be put on the computer tape; only answers to the questions will be. The strictest confidentiality will be maintained; answers will be analyzed in groups and there will be no way to connect any individual question answer to any family or any member of a family.

Face Page Name:	Some respondents resent being forced to designate a "Head of the Household"; therefore, do not use that phrase. Print the first and last name of the father or male guardian who lives in the home; where there is no father, print the name of the mother or female guardian who lives in the home.
Face Page Street:	Enter the house number and, after it, print the name of the street.
Face Page City:	Print the name of the city through which the family receives its mail. The name of the city you enter will, in most cases, be the same as the name of the study community. A few families who live on the outer edges of the study area may, in fact, be residents of a contiguous community. In all cases, enter the name of the city or town through which the family receives its mail. The addresses you enter will be used for mailing study calendars and possible future notices.
Face Page Zip code:	Enter the number clearly. If the respondent doesn't know the code, obtain the correct code from the zip code guide.
Face Page Phone:	Enter the telephone number clearly, the first three digits separated from the last four by a hyphen. When there is no phone in the home, but the respondent gives a phone number where he/she can be readily reached, write "None in the home" and after that the number and in parenthesis where it is located, i.e. (office), (neighbor's phone), etc. If the respondent states that there is no phone in the home and none where he/she can be reached readily, enter "None".

Notes: There are two coding blocks on the face page which interviewers do not use. The rectangle at the lower left contains the pre-coded printer's questionnaire number used to link each page. On the lower right is a smaller rectangle where coders will later enter a code for family size.

SECTION I

GENERAL QUESTIONS ABOUT THE HOUSEHOLD

Introduction

The questions on this page are general questions about the household. Answers to them are needed to describe the families that make up the school community and to make decisions that are needed for the study.

Section I
Question 1. Length of time at present address?

The first answer circle should be blackened if the family has lived at the present address for 11 or fewer months (the symbol "<" means "less than").

If the family has lived at the present address for a year or more, blacken an answer circle from 1 through 13 closest to the answer given by the respondent, using 6 months as the dividing point: for 1-5 months blacken the preceding year, for 6-11 months blacken the following year. For example: 1 year and 1 through 5 months = 1 year; 1 year and 6 through 11 months = 2 years; etc.

Section I
Question 2. Plan to move?

The intent of this question is to find out whether the family will or will not be living within the study monitoring area during the next twelve months. Therefore, if the respondent states that the family plans to move, ask what the new address will be. Blacken the "yes" answer circle only if the respondent states that the family definitely plans to move to an address outside the monitoring area. Blacken the "no" answer circle if the family does not plan to move, plans to move are indefinite, or if the new address is within the monitoring area. In the latter case, enter on the face page under the current street address, "Plans to move (date) , (new address) ."

Section I
Question 3. Agree to participate?

This question refers to phase 2 of the study, i.e. will the family participate in the weekly reporting of symptoms that will begin in the Fall. Before asking the respondent for an answer to question 3, explain how phase 2 will be conducted and demonstrate the use of the study calendar. If the respondent has previously refused to participate in phase 2, omit this explanation, mark the "no" answer circle for the question, and do not ask it.

Blacken the third circle, "yes, but uncertain" when the respondent indicates there is some vague reason that might prevent participation, such as "I may be working then and might not have the time."

Blacken the "yes" answer circle when the respondent is willing to participate in the weekly reporting of symptoms.

Blacken the "no" answer circle for absolute refusals or when the respondent gives a firm reason why participation is impossible.

Section I
Question 4. Where did you move from?

This question should not be asked if to question 1 the respondent answered that the family had lived 3 or more years at their present address. Instead, enter "NA" (not applicable) for both parents on the lines provided.

Ask question 4 if the answer to question 1 is less than a year, 1 year, or 2 years, and enter the city and State of the most recent, permanent, former address.

Do not blacken the circles under the answer lines; the city and State you enter will be checked against population data and the proper size will be entered by coders later when the questionnaires are processed.

Section I
Question 5. Largest city lived for 3 or more years?

This question applies to any time during the life of the mother and the father. Enter the city and State on the lines provided. Do not ask the second part of this question or blacken the circles under the answer lines; the city and State you enter will be checked against population data and the proper size will be entered by coders later when the questionnaires are processed. If the parents have not lived in any other city, enter the city and State of their present residence.

Section I
Question 6. Educational level?

Darken a circle for the father and the mother for only one of the six categories. Mark the level completed, i.e. if the parent completed high school and one year of college, blacken the circle for "high school". Usually a certificate, diploma, or degree is given for completion of categories 2 through 6; therefore, when there is doubt about the proper category to mark, it will help to ask the respondent if the parent holds a certificate or diploma of graduation. If the parent was educated in a private school system or in the school system of a foreign country that does not correspond to the U.S. public school system, darken the circle for the approximate U.S. public school system equivalent. Use the following definitions to select the proper category:

- Elementary School: completion of any grade from 1 through 8, or no formal education at all.

- High School Graduate: holds a certificate or diploma showing the completion of 12 grades, or holds a certificate showing attainment of an educational level equivalent to 12 grades (sometimes called General Equivalency Diploma or High School Equivalency Certificate).

- Trade, Technical or Business School Beyond High School: holds a certificate or diploma certifying completion of the training. If the parent attended the school for a period of time but did not complete the course of training, darken the circle for "High School Graduate" or "Elementary School", whichever was completed.

- Two-Year College Degree: holds a degree (usually called an "Associate Degree") from a community college. Note, however, that some four-year colleges or universities also give "Associate Degrees" upon completion of a specifically designed two-year course of study.

- Four-Year College Degree: holds a Bachelors degree showing completion of four years of college. Note that two years completed in a four-year college program is not the same as completion of a "Two-Year College Degree." Students in a four-year program pursue required liberal arts courses during the first two years. If a student drops out of the four-year program, he/she is not prepared for any specific job and does not receive any kind of degree. On the other hand, a two-year college degree program is designed to prepare the student for a specific job and results in an Associate Degree. Therefore, do not darken the "Two-Year College Degree" category when the respondent states two years of a four-year college program were completed. Instead, mark either "Trade, etc." or "High School Graduate", whichever is appropriate.

- Post-graduate degree beyond Bachelors Degree: holds either a "Master's" or "Doctoral degree". If the parent took "some postgraduate work" after completing the Bachelors degree but did not receive a post-graduate degree, darken the circle for "Four-Year College Degree".

Section I
Question 7.

Which of the following best describes your family?

The purpose of this question is to identify cultural patterns, not racial groups. Note that the answer categories are for extended groups rather than for specific races or ethnic groups. Ask the question exactly as it is printed. If it is necessary to rephrase the question, never ask "What is your family's race?" Many people at the present time are very sensitive on the subject of race and being categorized into one racial group or another. If you encounter a highly sensitive person, do not press for an answer to this question. Instead, note your observations of family members who are present during your interview and discuss later with your supervisor the proper answer circle to be marked. Ask the respondent to listen to the entire list of answer categories and then pick one that he/she believes best describes the family. First read the category and then explain it to the respondent:

- Hispanic: This word comes from "Hispania" which means Spain. People consider themselves hispanic if they or their ancestors came from Spain or a Spanish speaking country or island, such as Puerto Rico, Mexico, Cuba, Latin America or some South American countries.
- Black, not hispanic origin: This answer is for people who think of themselves as Black Americans or Afro-Americans. They or their ancestors came directly from a black African country.
- Asian or Pacific Islander: A person would consider that he belongs in this group if he or older members of the family came from any one of the Asian continental countries, such as China, India, Korea, Vietnam, Laos, Thailand, Cambodia, the Far Eastern republics of the USSR, Mongolia, or from island countries of the Pacific, such as Japan, Taiwan, Philippines, Malaysia, Indonesia, Sri Lanka (Ceylon), as well as other far west Pacific Islands.
- American Indian or Alaskan native: People in this group would be North American Indians or native people (Eskimos) of Alaska, but not the descendents of the more recent migrants to Alaska from continental U.S. and other countries.
- White, not Hispanic origin: In general this refers to the so-called "Anglo-Americans" whose ancestors emigrated to the U.S. from European countries other than Spain. A term frequently used to define "white" is "Caucasian".
- Other, include mixed: This answer is used when a person does not believe his family can be described by any of the foregoing answers and for families of mixed origins, such as combinations of blacks and whites, whites and Asians, etc.

SECTION II

EXPOSURE AND MOBILITY QUESTIONS

Introduction

The questions in this section of the questionnaire are about your home, its equipment (such as cooking and heating), your work schedule, and your travel to work. The answers to these questions will be used to estimate the kinds of indoor and outdoor environmental exposure that you and members of your family are probably subjected to each day.

Section II
Question 1. Best description of the home?

This question should be asked in two parts:

> Which of the following best describes your home: A one-family unit? Two family units? Three or more family units?
>
> Is this building: A single floor building? A split level? A tri-level? Two or more floor building?

Do not assume the answer or part of the answer from your observations. What might appear to be a single floor building could, if you had the privilege of going through the house, turn out to be a split-level or tri-level and frequently homes designed as single family units have been converted to multiple-unit homes for an income-producing source.

The six possible answers to this question are a combination of the two parts: number of family units and number of floors. A family unit is defined as a living space commonly shared by a group of people that considers itself a "family", usually consisting of common living room(s), sleeping room(s), bath(s), and common food preparation facilities. The answer circles are in table format so that the appropriate answer circle can be located quickly. To find the appropriate answer circle, first select from the three family unit categories in the left column and then select from the two number of floors categories at the top row of the table. The six possible answers are:

Ans. Circle #1:	A one-family unit in a one-floor building (usually ranch-type, single-family dwelling).
Ans. Circle #2:	Two family units in a one-floor building (usually a duplex).
Ans. Circle #3:	Three or more family units in a one-floor building (usually town-houses, condominiums, garden apts.).
Ans. Circle #4:	One family unit in a building of two or more floors (usually the traditional style, single-family home, and split or tri-level single-family homes).
Ans. Circle #5:	Two family units in a building of two or more floors (for the most part these will be small apartment houses, homes converted into apartments or duplexes).
Ans. Circle #6:	Three or more family units in a building of two or more floors (these will range from mini-rise to high-rise apartments, multi-level attached buildings, condominiums, or multi-level row houses).

Section II
Question 2. Age of the home?

The answers to this question are in ranges of months or years and, therefore, there is no need to determine an exact date the home was built. Select on the basis of the respondent's reply from the following:

Ans. Circle #1: Built within the past 11 and 1/2 months.

Ans. Circle #2: Built within 11 and 1/2 months and 5 years 5 months.

Ans. Circle #3: Built within 5 years 6 months and 10 years 5 months.

Ans. Circle #4: Built within 10 years 6 months and 15 years 5 months.

Ans. Circle #5: Built within 15 years 6 months and 20 years 5 months.

Ans. Circle #6: Built 20 years and 6 or more months ago.

Section II
Question 3. Number of rooms?

The possible answers to this question are self-explanatory. Be sure that bathrooms, porches, balconies, foyers, halls, or halfrooms are not counted.

Section II
Question 4. Fuel to operate household equipment?

This question should be asked in four parts:

1. Do you use gas, electricity or some other type of fuel to heat your home?
2. Do you use gas, electricity or some other type of fuel to heat water?
3. Do you use gas, electricity or some other type of fuel for cooking inside the house?
4. Do you use gas, electricity or some other type of fuel for outside cooking?

The answer circles are arranged in a table format so that the appropriate circle to be blackened can be quickly located. First look at the top row for the equipment category and then select from the fuel categories in the left column to mark the appropriate answer. Select one of the three answer circles to blacken after the respondent answers each part of the question. For each of the four types of equipment select:

Ans. Circle #1: When gas is used 60% or more of the time.

Ans. Circle #2: When electricity is used 60% or more of the time.

Ans. Circle #3: When other types of fuel or mixed types of fuel are used about equally.

Blacken only one answer circle for each type of equipment, except for outdoor cooking when the respondent states the family does not cook out-of-doors. In the latter case, blacken all three answer circles in the outdoor cooking equipment column.

Section II
Question 5. Type of heating system?

Blacken only one circle for the type of system that is generally used. For example, the respondent might answer, "We use a central gas furnace and an electric heater in the bathroom." For that answer, mark circle #1, central gas.

Ans. Circle #1: A gas-fueled heating system that distributes heat throughout the home from a central point.

Ans. Circle #2: A gas-fueled room heater connected to a flue with a stove pipe or other means of conveying fumes (products of combustion) to the outside of the room or building.

Ans. Circle #3: A gas-fueled room heater from which the fumes (products of combustion) are emitted (vented or thrown off) into the room or to a point within the building.

Ans. Circle #4: Any other type of heater or heating system that is not fueled by gas.

Section II
Question 6. Do you use a fireplace?

The key word in this question is "use" If there is a fireplace in the home which is not used, blacken circle #1, no.

Section II
Question 7. Do you use air conditioning?

Again, in this question the key word is "use". If there is air conditioning equipment in the home which is not used, blacken circle #1, no. This answer circle should, of course, be marked also when the home is not equipped with any kind of air conditioning.

Answer circles #2 and #3 should be marked for central and room air conditioning equipment used in the home if the equipment produces air cooled artifically by means of a coolant such as freon.

Answer circle #4 is for reporting any other kind of air conditioning used except the equipment described for answers 2 and 3. For example, some respondents might answer, "we use a desert air conditioner". This is a fan which blows air over water to cool it. For this type of answer, blacken circle #4 and write on the line provided "desert air conditioner".

Section II
Question 8. Do you use an electrostatic precipitator?

An electrostatic precipitator is an electronic device that removes particulate matter (e.g. dust, smoke, certain pollens, etc.) from the air. Some respondents may call it an "electronic air cleaner". The key word in this question is, again, "use". Mark the appropriate answer circle as follows:

Ans. Circle #1: There is no electrostatic precipitator in the home or there is one in the home that is not used.

Ans. Circle #2: The electrostatic precipitator used in the home is a central unit, i.e. it is placed in the return duct of the central air conditioning or heating system.

Ans. Circle #3: The electrostatic precipitator used in the home is a room unit, i.e. it is placed in a room as one would place a room air humidifier.

Ans. Circle #4: The respondent is uncertain or does not know whether there is an electrostatic precipitator in use in the home.

Section II
Question 9. Do you have an attached garage?

In this question the word "attached" means that the garage is a part of the house structure. Note the instruction for question 9 printed under it in the questionnaire. The word "store" in the instruction and in answers 2, 3, and 4 means temporary storage, i.e. kept in the garage when the car(s) is(are) not in use. This meaning contrasts with "permanent storage", i.e. the car(s) is(are) in the garage for an extended period of time, the motor(s) is(are) seldom started, and the car(s) is(are) seldom taken out of the garage to be used. If there is difficulty in deciding between temporary and permanent storage, use the following definitions:

permanent storage = car(s) motor(s) is(are) never started or started no more than once a week - darken answer circle #1.

temporary storage = car(s) motor(s) is(are) started periodically and regularly - darken answer circle 2, 3, or 4 depending upon the number of cars.

Section II
Question 10. Are you employed outside the home?

The purpose of this question and questions 10a through 10h is to estimate the parents' pollution exposure peculiar to their work location and while going to and from their jobs, versus their exposure while in the home or home neighborhood. The job they perform may be either paid or voluntary work for the purposes of this series of questions. Darken answer circle #1, no, if the parent performs no task that requires being out of the home or home neighborhood at least once a week on a regular basis. For tasks or jobs, paid or voluntary, requiring the parent to be out of the home neighborhood regularly at least once a week, mark answer circle #2, yes, and ask questions 10a through 10h.

Section II
Question 10a. At your job do you work indoors or outdoors?

This question should be asked as shown above. The respondent in most cases will reply with either "indoors" or "outdoors". If the reply is "both indoors and outdoors", ask the respondent approximately what part of the work hours is spent indoors. Depending upon the reply to this follow-up question, mark the answer columns as follows:

Indoor column only should be marked when 2/3 or more of the work hours are spent indoors.

Outdoor column only should be marked when 2/3 or more of the work hours are spent outdoors.

Both columns should be marked when neither the indoor or the outdoor work requires 2/3 or more of the time (i.e. the work is approximately evenly divided between the indoor and outdoor categories).

Only one answer within the columns should be marked. The four possible answers in the indoor column are self-explanatory. The first two possible answers in the outdoor column are also self-explanatory; the third, other, should be marked when the respondent spends his work day at a fixed site (stationary) and occasionally has to travel to complete his work, or vice versa.

Section II
Question 10b. How do you usually get to work?

Mark one answer only. Answers 1 through 4 are self-explanatory. Use answer circle #5 for any mode of transportation to work other than 1 through 4 as listed and enter on the line provided what the travel mode is. The "other" category (answer circle #5) may be used also when mode of transportation varies. For example, the respondent answers, "I walk some days and drive other days". For this example, darken answer circle #5 and write on the line provided "1 and 4 above".

Section II
Question 10c. How long does it take you to get to work?

Mark one circle only. Darken the answer circle that represents the time it takes to get to work 50% or more of the time. For example, some respondents might reply, "Well, it depends on traffic; sometimes 3/4 of an hour and other times more than an hour". This type answer requires a probe question. An example of a probe that could be used is, "Would you say that of the 5 days you work each week, it takes 3/4 hour on three days and more than an hour on the other two days, or vice-versa". If the respondent replies, "Most weeks only Fridays are bad and it takes more than an hour but some weeks the traffic is just as bad on one or two other days". Note that this answer tells you that 50% or more of the time the travel time is 3/4 hour. Therefore, you would darken answer circle #3, 1/2 to 1 hour. If the respondent can't decide how to answer your probe, darken the answer circle for the longer time. For outdoor mobile type work, the worker usually must go to a specific site to check in or pick up needed equipment. In that case, mark the time it takes to travel to the specific site where the work day begins.

Section II
Question 10d. Do you travel predominately on roads with 6 or more lanes?

Note that predominately is defined as 50% or more of the time. If the respondent is not sure of the answer to this question or simply does not know, mark answer circle #1, no.

Section II
Question 10e. What days of the week do you usually work?

The answers "Monday-Friday" and "Monday-Saturday" will be given by about 75% or more of the respondents. Any other answer should be recorded in answer circle #3, other, and the initials (M,T,W,Th,F,Sa,Su) for the days worked entered on the line provided.

Section II
Question 10f. How many hours a day do you usually work?

Mark one answer only. The word "usually" means 50% or more of the time. If the length of the work shift varies regularly, i.e. a 6-hour shift one week, an 8-hour shift the next, etc., select the answer circle for the longer shift.

Section II
Question 10g. What time of day do you usually start work?

Mark one answer only. Again, "usually" means 50% or more of the time. Because of the ranges given, there is little likelihood that there will not be at least one appropriate for any answer respondents might give. If by chance, an answer is given that cannot be placed in one of the five answer categories, make a note of the explanation the respondent gives and discuss it with your supervisor.

Section II
Question 10h. What is the address of your place of work?

Explain to the respondent it is not necessary to give a specific address; the street on which the workplace is located and the nearest intersecting street is all that is needed. The purpose of the question is to place the location of work on a grid so that an estimate of the pollution levels recorded in the grid area can be used to estimate the total exposure of the worker, i.e. home exposure, travel to work exposure, and exposure during the hours at the work location.

Section II
Question 11. At any job.....are you now or have you been frequently exposed to irritating smoke, dust, or fumes?

This question represents a decided shift from the #10 to #10h series of job questions immediately preceding it. Therefore, the following explanation must be given to the respondent before question 11 is asked:

> "The job questions I have just finished asking you were about the jobs you and your husband now hold, either a job for pay or a voluntary job. The answers you gave to them will permit us to determine the extent of exposure that is generally in the area of those jobs and in the area of travel to and from those jobs.
>
> I am now going to ask a question about jobs for pay only either the jobs you and your husband now hold or jobs you held some time in the past. With this question we estimate "occupational exposure" at any time, past or present. Occupational exposure is exposure that is due to irritating smoke, dust, or fumes that result from a manufacturing or industrial process."

When the respondent appears to understand what is wanted, read question #11 as it is printed in the questionnaire. If the respondent is not sure of how to answer the question, darken answer circle #1, no.

Section II
Question 11a. How long were you exposed?

The answer ranges to this question are self-explanatory. If the respondent is uncertain between the choice of two possible answers, darken the answer circle for the longer period of time.

Section II
Question 11b. What kind of irritant were you exposed to?

Note that the examples listed in the questionnaire under this question are not exhaustive. Write in whatever the respondent states is the irritant, with the exception of "cigarette smoke" from fellow workers, which is not, of course, the kind of industrial or manufacturing pollution exposure intended in this question.

SECTION III

GENERAL QUESTIONS ABOUT HOUSEHOLD MEMBERS

Introduction

This last section of the questionnaire contains questions about factors that affect illness which must be taken into account when the study data are analyzed. The factors we need to know for each person in your family are age, sex, chronic illness, and cigarette smoking pattern of those members who smoke. First, I'll ask you for the name of each person who lives here 75% or more of the time. Don't include anyone who is away from home a good part of the time, such as away at college or in the military, or living most of the time with a relative or friend.

Section III
Column 1.

Names of Family Members

List the first name and middle initial of each person who lives 75% or more of the time in the home. List the surname also if it differs from the surname shown on the face sheet.

Start with the father; if there is none, start with the mother. Then, list the children in the order of the oldest to youngest. Be certain that a recently born infant is not omitted. Then, list other adults in the family such as grandparents, aunts, uncles, boarders, etc. who have lived with the family for at least the past 12 months.

Note that alternate lines are shaded across both pages 10 and 11. This shading is for the purpose of avoiding mistakes in entering answers, especially in the columns furthest removed from the name of the family member. Do not skip any lines; enter names and answers to question on both the shaded and unshaded lines.

Section III
Column 2.

Date of Birth

Use two digits as follows for birth month:

01 = January
02 = February
03 = March
04 = April
05 = May
06 = June
07 = July
08 = August
09 = September
10 = October
11 = November
12 = December

For year, enter the four digits of the birth year.

Whenever the respondent seems doubtful about the year, help her/him to relate the year in question to the age of another family member or to an event such as family moving, a national election, the parents' marriage, or other similar notable occurrence.

Section III
Column 3.

Sex

Self-explanatory.

Section III
Column 4. Position in Household

Ans. Circle #1: Designate only one male as the father; a biological father or male guardian.

Ans. Circle #2: Designate only one female as the mother; a biological mother or female guardian.

Ans. Circle #3: This answer circle should be marked for persons living in the home who may or may not be the biological children of the listed father and/or mother, including foster children, nieces, nephews, cousins, etc.

Ans. Circle #4: Mark this circle for any adult who has lived in the home 12 or more months, other than the parents designated in answer circles 1 and 2. Circle #4 will usually be used for aunts, uncles, boarders or friends who are a permanent part of the family.

Section III
Column 5. Chronic Diseases

When you ask the questions for diseases in this column, emphasize that you want to know only about illnesses of family members that a doctor has diagnosed. The term "doctor" for the purposes of this study is defined as any person trained to give primary medical care or specialized medical care: medical doctors (physicians, M.D.'s), chiropractors, osteopaths, licensed nurse practitioners, licensed doctors' assistants. Decisions regarding what an illness is that are made by practitioners of religious cults, untrained friends or relatives, school nurses, naturopaths, and others who are not professionally qualified in the medical field are not acceptable.

Do not, however, report a family member has a chronic illness diagnosed by a physician when the respondent states that family member has the same symptoms as another family member who was diagnosed by a physician. For example, a mother states her husband has a daily cough, gets up phlegm from his chest and is extremely short of breath. Their doctor examined him and said he has chronic bronchitis. Recently the oldest son has developed the same symptoms and the mother is certain that he also has chronic bronchitis. In this example, the husband would be reported as a diagnosed case of chronic bronchitis; the son would not be.

None: Mark this circle whenever the person does not have chronic heart disease, asthma, or other chronic lung disease symptoms or who has symptoms but has not been told by a doctor that a specific chronic heart or lung condition exists.

Chronic Heart: When the respondent states a family member has a doctor's diagnosis of a chronic heart condition, ask "What was the doctor's diagnosis?" Record the diagnosis that the respondent reports on the form "Report of Doctor's Diagnosis" (see page 31 for sample form) and turn in this completed form with the questionnaire to your supervisor calling her attention to the doctor's diagnosis report.

Asthma: If the respondent states a doctor has diagnosed asthma for a family member, ask if that person had an asthma attack within the last year. The respondent's answer to this follow-up question will determine the appropriate circle to darken for asthma as follows:

Inactive asthma column = no asthma attack within the past 12 months.

Active asthma column = one or more asthma attacks within the past 12 months.

Chronic Lung: Disease other than Asthma: Follow the instruction given for chronic heart disease.

Section III Column 6. Does this person smoke a pipe or cigar?

Darken answer circle #2, yes, if the respondent indicates that the family member smokes a pipe or cigar 50% or more days (4 or more) each week. Darken answer circle #1, no, for family members who do not smoke a pipe or cigar and for those who smoke only occasionally (less than 50% of days during a week).

Section III Column 7. Smoked a total of more than 100 cigarettes?

The answer that is entered to this question and to the question in column 8 will classify the family member as a:

Current smoker = "yes" answers in Columns 7 and 8.

Ex-smoker = "yes" answer in Column 7, "no" answer in Column 8.

Non-smoker = "no" answers in Columns 7 and 8.

When you ask the Column 7 question, call the respondent's attention to the fact that 100 cigarettes are equal to 5 packs and stress the words "during his or her entire life". In other words, this could mean 5 packs (100 cigarettes) smoked in the past week or one pack a year in the past 5 years, or any other period of time.

Section III
Column 8.

Does this person smoke cigarettes now?

Darken answer circle #1, no, only for family members who at the present time do not smoke any cigarettes at all. This will include members who never smoked as well as those who have smoked in the past but quit smoking.

Darken answer circle #2, yes, for family members who smokes cigarettes at the present time, regardless of how many or how frequently, even if the member smokes cigarettes only rarely, i.e. only once a month, at parties sometimes, etc.

Darken answer circle #3, don't know, if the respondent is unsure of the family member's smoking habit.

Section III
Column 9.

How many cigarettes smoked?

This question refers to present smokers as well as persons who smoked and have quit and this should be stressed when the question is put to the respondent. Ask this question only for those family members marked "yes" (answer circle #2) in column 7, i.e. members who smoked a total of more than 100 cigarettes during his or her entire life.

Ans. Circle #1: Self-explanatory.
Ans. Circle #2: Darken for any answer between 11 and 25 cigarettes.
Ans. Circle #3: Darken for any answer between 26 and 35 cigarettes.
Ans. Circle #4: Darken for any answer of 36 or more cigarettes.

Section III
Column 10.

Age first started smoking?

This question also refers to present smokers as well as to persons who smoked and have quit and this should be stressed when the question is put to the respondent. Ask this question only for those family members marked "yes" (answer circle #2) in column 7.

Explain to the respondent that for this question, the answer that is wanted is the age at which the family members started the habit of smoking, not age when the member smoked his/her first cigarette. The two events might, of course, coincide exactly, but usually non-smokers who become smokers try a cigarette or two but do not become regular smokers (daily, weekly, monthly, etc.) until a period of time has elapsed after the first try.

Enter two digits for the age in the squares provided in this column for the answer.

If the respondent specifies a year that the member started smoking, convert the answer to the age of the member in the year specified. In the same manner, the age will have to be determined if the answer is given in number of years ago that the member started smoking.

Section III
Column 11.

Age stopped smoking?

In constrast to the two previous questions, this one refers only to family members who smoked and have quit. Ask it only for those members marked "yes" (answer circle #2) in column 7 and "no" (answer circle #1) in column 8.

Many smokers today have quit or tried to quit smoking several times. Explain to the respondent that this question pertains only to the last time the family member quit.

Enter two digits for the age in the squares provided in the column for the answer.

It will be necessary to convert the answer to age if the respondent's answer specifies a year or number of years ago that the member stopped smoking, as was done for the Column 10 question.

After you have completed the series of questions on cigarette smoking (Columns 8 through 11), quickly review the answers you have recorded to look for inconsistencies in the answers. There should be one of three patterns of answers recorded for each family member:

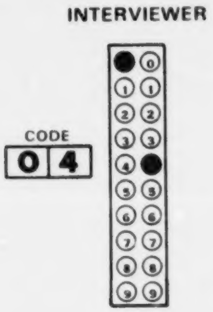
- If "yes" is the answer in Columns 7 and 8, Columns 9 and 10 should have answers and Column 11 should be blank.
- If "yes" is the answer in Column 7 and "no" in Column 8, Columns 9, 10 and 11 should have answers.
- If "no" is the answer in Columns 7 and 8, Columns 9, 10 and 11 should be blank.

INSTRUCTIONS FOR CODING AT THE BOTTOM OF PAGE 11

At the bottom of page 11 there are four coding rectangles. Two of them are in a shaded area on the right side of the page with the titles "Respondent" and "Area Community" printed above them. When the questionnaires are processed, coders will enter appropriate codes in these two rectangles on the right and, therefore, interviewers should not make any entries in them. However, the interviewer who interviews the family and completes the questionnaire must enter codes in the two rectangles on the left side of page 11 as follows:

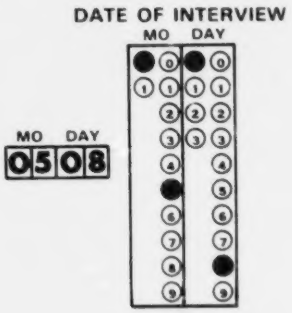
Coding the rectangle entitled "Interviewer"

First, write the two digits of your own code number in the squares at the left of the coding rectangle. Then, blacken the corresponding number circles in the coding rectangle. For example, if the interviewer's code number is "4", she would make the entries as shown below.



Coding the rectangle entitled "Date of Interview"

In the four squares at the left of this coding rectangle enter two digits for the month and two digits for the day you interview the respondent. Use the table of months on page 25 of these instructions to select the digits for the month entry. For the day entry, use "0" plus the day digits for days 1 through 9 of the month and the two digits of the day number for the remaining days in the month. Then, blacken the corresponding number circles in the coding rectangle. For example, if the family is interviewed on May 8, the interviewer would make the entries as shown below:



ARD STUDY BACKGROUND QUESTIONNAIRE SUPPLEMENT

REPORT OF DOCTOR'S DIAGNOSIS

Family Surname ____________________ Questionnaire I.D. ____________________

Family Member Number	Family Member Name	Doctor's Diagnosis

INSTRUCTIONS FOR COMPLETING
REPORT OF DOCTOR'S DIAGNOSIS

Family Surname:	Copy name entered on Face Page.
Questionnaire I.D.:	Copy 6-digit number in black print on Face Page immediately below the questionnaire title.
Family Member Number:	Copy 2-digit number printed in Column 1, Section III on the line on which the family member's name is entered.
Family Member Name:	Copy the name as entered in Column 1, Section III.
Doctor's Diagnosis:	Enter the diagnosis that the respondent reports was made by the doctor.

Appendix D

BACKGROUND STUDY SURVEY INTERVIEWING

ARD STUDY BACKGROUND QUESTIONNAIRE SUPPLEMENT

REPORT OF DOCTOR'S DIAGNOSIS

Family Surname ____________________ Questionnaire I.D. _______ _______

Family Member Number	Family Member Name	Doctor's Diagnosis

QUESTIONNAIRE INFORMATION SHEET

Name of Household Head ______________________________ Study Area/Zone ____________

Name of Respondent __________________________________ Questionnaire No. __________

Relationship of Respondent
to school child _____________________________________ Interviewer _______________

Respondent Contact Information:

______ 1) Questionnaire completed ________________________ (date)

______ 2) Acceptable Respondent not home; please see ______________________

on____________ at____________a.m./p.m.

______ 3) No answer

______________	______________	______________
date and time of 1st call	date and time of 2nd call	date and time of 3rd call
______________	______________	______________
date and time of 4th call	date and time of 5th call	date and time of 6th call

______ 4) Respondent doesn't live here anymore/Respondent unknown at this address/ address not a residence

______ 5) No English spoken

______ 6) Refused - Reason, if stated by Respondent ______________________

____

____

____

____

INTERVIEWER SUMMARY SHEET

Interviewer: ______________________________ Date: ____________

Team Leader: __________________________ Community: ____________

WRITE THE APPROPRIATE NUMBERS IN THE COLUMNS ON THE LEFT.

______ Questionnaires completed:

Name of Head of Household	Ques. No.	Time In	Time Out

______ Residence is not single family dwelling

______ Refused

______ Appointments made for later callbacks

______ No answer (unscheduled callbacks to be made at a later date)

______ TOTAL CONTACTS ATTEMPTED TODAY (Total of 5 categories above)

______ Total hours spent in field study (including time spent traveling)

Comments: ____

____

____

____

1978-79 ARD STUDY
WEEKLY REPORT OF RECRUITMENT INTERVIEWING

COMMUNITY ______________________ WEEK BEGINNING ______________________ ENDING ______________________

SUMMARY OF INTERVIEWING									TOTAL
	COPLEY				UNIVERSITY CALIFORNIA RIVERSIDE				
	ZONE 1	ZONE 2	ZONE 3	ZONE 4	ZONE 1	ZONE 2	ZONE 3	ZONE 4	
I. Interviews Assigned This Week A. First assignments									
B. Reassignments									
C. Total assigned									
II. Questionnaires Completed A. Of families meeting study criteria									
B. Of families ineligible for study									
III. Interviews Attempted A. Refusal									
B. Unable to contact									
1st attempt									
2nd attempt									
3rd attempt									
4th attempt									
5th attempt									
6th attempt									
IV. Interviews Not Attempted									

1978-79 ARD STUDY
WEEKLY REPORT OF RECRUITMENT INTERVIEWING

COMMUNITY ______________________ Page No. ________

LIST OF FAMILIES MEETING STUDY CRITERIA									
1	2	3	4	5		6	7		8
				PARENTS			INTERVIEWING		
FAMILY I.D.	FAMILY SURNAME	SORT CODE	RACE	NUMBER WORKING	TOTAL NUMBER	SIZE OF FAMILY	INTERVIEWER CODE	DATE	COMMENTS

WEEKLY REPORT OF ARD STUDY RECRUITMENT INTERVIEWING

Page No. ____ CONTINUATION OF LIST OF FAMILIES
MEETING STUDY CRITERIA

COMMUNITY________________ WEEK BEGINNING__________ ENDING __________

LIST OF FAMILIES MEETING STUDY CRITERIA									
1	2	3	4	5		6	7		8
				PARENTS			INTERVIEWING		
FAMILY I.D.	FAMILY SURNAME	SORT CODE	RACE	NUMBER WORKING	TOTAL NUMBER	SIZE OF FAMILY	INTERVIEWER CODE	DATE	COMMENTS

WEEKLY REPORT OF ARD STUDY RECRUITMENT INTERVIEWING

Page No. ____ CONTINUATION OF LIST OF FAMILIES MEETING STUDY CRITERIA

COMMUNITY__________________________ WEEK BEGINNING______________ ENDING ______________

LIST OF FAMILIES MEETING STUDY CRITERIA									
1	2	3	4	5		6	7		8
				PARENTS			INTERVIEWING		
FAMILY I.D.	FAMILY SURNAME	SORT CODE	RACE	NUMBER WORKING	TOTAL NUMBER	SIZE OF FAMILY	INTERVIEWER CODE	DATE	COMMENTS

INSTRUCTIONS FOR COMPLETING 1978-79 ARD STUDY WEEKLY REPORT OF RECRUITMENT INTERVIEWING

Purpose of Form

To provide weekly summaries of progress being made in recruiting ARD Study families.

To provide a list of families meeting study criteria.

To provide summaries on family characteristics for balancing panel families across communities.

Page 1 - Identifying Information (above double line)

Community - Enter the name of the community, i.e., West Los Angeles, Garden Grove, Glendora, or Upland.

Week- Enter the date of the first day of the interviewing work week. Use calendar weeks. If Monday is a holiday, enter Tuesday's date on the line following "Week Beginning," if interviewing stops on Thursday, enter Thursday's date on the line following "Ending."

PAGE 1 - SUMMARY OF INTERVIEWING

Item 1 - Interviews Assigned this Week

A. "First assignments"

Enter the number of families assigned to interviewers for the first time this interviewing week - (no prior attempt made to contact the family). Report assignment by zone and whether assigned to prime contractor or UCR interviewers.

B. "Reassignments"

Enter the number of families the interviewers were unable to contact on a previous survey day in the community.

C. "Total assigned"

Enter the sum of Item I-A and Item I-B. This total equals the sum of Items II, Items III, and Items IV.

Item II - Questionnaires Completed

A. Families Meeting Study Criteria

Enter the number of questionnaires completed this week for families meeting study criteria. List the name and information for each family meeting the study criteria on the back of the form or on a continuation page.

B. Families Ineligible for Study

Enter the number of questionnaires completed this week for families ineligible for the study.

Item III - Interviews Attempted

A. Refusal

Enter the number of families refusing to be interviewed or to answer questions this week.

B. Unable to Contact

Enter the total number of families you were unable to contact this week.

1st Attempt

Enter the number of families assigned for the first time that you were unable to contact this week.

2nd Attempt

Enter the number of families you were unable to contact this week on a second attempt. These families were reassignments under Item I-B.

3rd Attempt

Enter the number of families you were unable to contact this week on a third attempt. These families were reassignments under Item I-B. Item I-B.

Continue

Distribute attempts by whether it is the 4th, 5th, or 6th attempts to contact family.

Item IV - Interviews Not Attempted

Enter total number of interviews not attempted. List in parentheses the number who could not be interviewed because of lack of family name and no apartment number, because family moved away, and because no English was spoken.

**All entries must be by appropriate zone and whether interviewer worked for the prime contractor or UCR.

Page 2 - List of Families Meeting Study Criteria

Community - Enter name of community. This must be the same as on page 1.

Page No. - Enter page number of the report.

Item 1 - Enter family I.D. number. This is the printed number on the face page of the questionnaire.

Item 2 - Enter family surname as it appears on the face page of the ARD Study Background Questionnaire.

Item 3 - Enter the two-part sort code from the top of the face page.

Item 4 - Enter the numeric code for race from question 7, page 5 of the ARD Study Background Questionnaire, i.e., for hispanic enter, "1", for white not hispanic origin enter, "5", etc.

Item 5 - Column 1, enter the number of parents working taken from question 10, page 8. Column 2, enter total number of parents in the home. "1" or "2" are to be entered in these columns only. No other numbers.

Item 6 - Enter the number of individuals in the family, column 1, page 10.

Item 7 - Column 1, enter the interviewer's I.D. code, column 2, enter the date of the interview.

Item 8 - Enter comments.

Continue list of families meeting study criteria on continuation page and number consecutively.

47A

INSTRUCTIONS FOR CONDUCTING ARD BACKGROUND QUESTIONNAIRE VALIDATION

1. We will randomly sample 10 percent of each team's completed ARD Background questionnaires.

2. Team I's questionnaires will be validated by Team II's Team Leader and vice versa so that no team leader will validate her own team's questionnaires.

3. Validations will be conducted by telephone during the next day or two following the original completion of the questionnaire.

4. The validation call will be explained to the Respondent as a verification call since we are verifying the interview and not questioning the Respondent's answers.

5. Do not change any answers or make any notations on the original questionnaire except for a validation note to be placed to the right of the I.D. number on the face sheet of the questionnaire: Val. 5/17.

6. The following items will be covered during validation:

   a) Verify the telephone number on the face page of the questionnaire (do not ask the Respondent; obviously if you have reached the Respondent the telephone number is correct).

   b) Ask to speak to the Respondent named on the buff since only the Respondent knows how the questions were answered. If the Respondent is not available, ask when to call again.

   c) Ask the following questions:

      - Section I, Q1, 2, and 3
      - Section II, Q1 and 4 (home heating equipment and indoor cooking equipment only)
      - Section III, name and position in household of Respondent only
      - Section III, read names of children in household and ask which of those are in kindergarten through 5th grade

7. Place the validation sheet inside the original questionnaire and once the questionnaire has been xeroxed, staple the validation sheet to the back of the xerox copy.

ARD BACKGROUND QUESTIONNAIRE VALIDATION SHEET

Family Name______________________________ Date____________________

Respondent Name/
Position______________________________ Val. Int._______________

Telephone No. ___________________________

Any changes in Questionnaire answers?

_____ Yes _____ No

If yes, list below only those answers which differed from original answers on Questionnaire. Do not change answers on Questionnaire.

New Answer	
	Section I
____________________	Q1 (length of time at address)
____________________	Q2 (moving)
____________________	Q3 (family participation)
	Section II
____________________	Q1 (family dwelling)
____________________	Q4 (home heating)
____________________	Q4 (indoor cooking)
	Section III
____________________	Name and position of Respondent
____________________	Children in kindergarten - 5th grade

Comments: ____

____

____

____

Appendix E

BACKGROUND STUDY PARTICIPANT SELECTION

Table E1

TWO-DIGIT FIELD SORTING AND TABULATING QUESTIONNAIRE CODE

A. Number of Parents and Dwelling Classification

Dwelling Classification	2 Parents Live in the Home		1 Parent Lives in the Home	
	At Least One Preschooler in the Home	No Preschooler in the Home	At Least One Preschooler in the Home	No Preschooler in the Home
The home is a single family dwelling	A	B	C	D
The home is a multiple family dwelling	E	F	G	H

B. Type of Cooking and Air Conditioning Classifications

Air Conditioning Classification	Cooking Classification	
	Gas Cooking	Electric Cooking
Central	1	4
Room	2	5
None	3	6

COPLEY INTERNATIONAL CORPORATION

Economic Research • Marketing Research • Environmental Research • Management Services

September 1, 1978

Dear

Your family has been selected to participate in the continuation of the acute respiratory disease study in your community. This is the study being conducted by Copley International Corporation and the University of California, Riverside, for the U.S. Environmental Protection Agency.

As you recall, the first part of the study was a survey of families with elementary school children. One of our survey interviewers called at your home this summer and asked you questions about possible exposure to environmental pollutants in the home, on the way to work, and at the job. The interviewer also asked questions about your family's health, about how long your family has lived in your community, and about other items of general information. The answers to the survey questions helped us to judge the exposure most school families in your community experience and to select those families which will enable us to identify pollutants which affect family health. We appreciate your participation in this survey and your agreement to continue to participate in the second part.

Participation in the second part of the study involves symptom reporting. It is not expected to take much time, but it is the most important part and your family's daily symptom reporting is vital to its success. Once a week for a period of approximately six months, beginning the third week in September, an interviewer will phone you to discuss the health of all family members during the previous week. She will also ask you about the number of hours your kitchen stove was used and the number of hours you spend outdoors each day. The answers to these weekly questions will be grouped and evaluated in relation to pollution exposure measurements which we will be recording every day in your community.

The enclosed calendar is for your use. It was designed to assist you in keeping a daily record of symptoms and illness experienced by each member of your family. Page 2 of your calendar suggests one method of keeping your calendar. We used initials in place of names. For example, we used "B" for Bill, a male child, and "A" for Ann, a female child. We used numbers to represent the symptoms listed on the calendar. For example, number "1" represents "eye irritation."

7817 HERSCHEL AVENUE • P.O. BOX 1530 • LA JOLLA, CALIFORNIA 92037

TELEPHONE (714) 454-0391

Please begin recording symptoms and making notations on your calendar on Sunday, September 10, 1978. Continue doing so each day for the remainder of the study. It will be hard to remember the exact days you or another member of your family had a cold or other symptoms important for the study if you wait a day or two to make notations. The exact day is very important because the symptoms must be related to the environmental measurements for the same day. This will help us find out what environmental factors affect you and other persons suffering from acute respiratory disease.

With your help, we can prepare the necessary health response information to support measures to improve the environment of your community and other communities in Southern California. Our interviewer will phone you during the second week in September to answer any questions you may have and to establish a convenient time for future calls. We thank you again for agreeing to help.

Sincerely,

R David Flesh

R. David Flesh
Project Director

RDF:jld
Enclosure

ARD
STUDY
CALENDAR
1978

EPA

Health Effects Research Laboratory
U.S. Environmental Protection Agency
Research Triangle Park, North Carolina 27711

WHAT YOU SHOULD KNOW ABOUT THIS CALENDAR AND THE ARD STUDY

PLEASE MAKE NOTATIONS ON YOUR CALENDAR EACH DAY. It will be hard to remember the exact days you or another member of your family had a head cold or other symptoms and other information important for the ARD Study if you wait a day or two to make notations. The exact day is very important because we are taking measurements in your community 24 hours every day that will help us to find out what environmental factors affect you and other persons suffering from acute respiratory disease. So, if you report your symptoms for the exact day they occur, we will examine the right measurements for you.

Our interviewer will call you each week and ask you questions about the previous week. She will ask you for yourself and each member of your family. The following symptoms are numbered to assist you in keeping your calendar:

0-No Symptoms
1-Eye Irritation
2-Headache
3-Runny Nose
4-Sinusitis or Sinus Problem
5-Aching Muscles
6-Chest Discomfort or Chest Pain
7-Dry Scratchy Throat

8-Sore Throat
9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity

16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED:
- 22-Ear Infection
- 23-Bronchiolitis
- 24-Bronchitis
- 25-Influenza
- 26-Pneumonia

27-Out of Neighborhood for all 24 hours.

Questions for mothers or respondents only:

a. Number of hours oven used

b. Number of hours stove top burners used

c. Number of hours spent outside between 12 noon and 6:00 p.m.

a, b, and c have been printed on each calendar day to help in keeping record of questions a, b, and c for Mothers or respondents. For question c, continue to use 12 noon to 6:00 p.m. when you go from daylight-saving time to standard time.

On the back of this page there is a sample calendar month for a hypothetical family. It may help you decide how you want to keep your calendar. Use it the way that is easiest for you. Just be sure to note enough information each day so that you can answer the questions the telephone interviewer will ask you. Please keep date of initial symptoms and duration for each family member. The spread of symptoms or irritation symptoms through the family is important. In the example we used "F" for father, "M" for mother, "B" for Bill, and "A" for Ann. We used "0" on the first two days of the month to show no symptoms in the family. On Wednesday Bill had a runny nose, "B-3", on Thursday Bill had a head cold and Ann had a runny nose, "B-16", "A-3", on Friday both Bill and Ann had head colds, "B-16", "A-16", etc.

Note on the first 5 days of the month the mother did not use the oven so she made no entry for a; on the 6th day she used the oven 3 1/2 hours and coded a"3 1/2"; on day 1 and 2 she used the stove top burners about 1 hour each day and coded b"1"; on day 1 and day 2 the mother spent about 1 1/2 hours outside each day and coded c"1 1/2", etc.

On the next page your calendar begins. The block for the first day you should start to make your notations is marked.

WITH YOUR HELP, MEASURES CAN BE TAKEN TO IMPROVE OUR ENVIRONMENT.

WE THANK YOU FOR AGREEING TO HELP

WE USED AN "0" TO SHOW NO SYMPTOMS IN THE FAMILY

sunday	monday	tuesday	wednesday	thursday	friday	saturday
a b c	1 0 a b 1 c 1½	2 0 a b 1 c 1½	3 B-3 a b 1½ c 1	4 B-16 A-3 a b 2 c ½	5 B-16 A-16 a b 1 c ½	6 A-16 a 3½ b 1 c 1
7 0 a b ½ c 4	8 0 a b 1 c 2	9 0 a b 1 c ½	10 0 a b ½ c 3	11 0 a b 1 c 2	12 0 a b 1½ c 1	13 0 a 3 b ½ c
14 B-8 a b ½ c 5	15 B-8,16,14,21,15 a b 1 c 1	16 B-14,15 A-8,16,14,21,15 a b ½ c 1	17 B-15 A-14,15 a 1½ b 1 c	18 A-15 a b ½ c 2	19 0 a b ½ c 1	20 0 a 2 b ½ c
21 0 a b ½ c 4	22 0 a b 1 c 1½	23 0 a b ½ c 1	24 F-27 a b 1 c 2	25 F-27 M-1 B-1 A-1 a b 1 c	26 0 a 1 b 1 c ½	27 F 27 M 27 B 27 A 27 a b c
28 F-27 M-27 B-27 A-27 a b c	29 0 a b 1 c	30 B-9,16 a b 1 c 1	31 B-10,17 a b 1½ c ½			

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

0-No Symptoms
1-Eye Irritation
2-Headache
3-Runny Nose
4-Sinusitis or Sinus Problem
5-Aching Muscles
6-Chest Discomfort or Chest Pain
7-Dry Scratchy Throat
8-Sore Throat
9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED:
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia

27-Out of Neighborhood for all 24 hours

SAMPLE

Reproduced from best available copy.

SEPTEMBER 1978

BEGIN RECORDING YOUR SYMPTOMS →

sunday	monday	tuesday	wednesday	thursday	friday	saturday
					1 a b c	2 a b c
3 a b c	4 a b c	5 a b c	6 a b c	7 a b c	8 a b c	9 a b c
10 a b c	11 a b c	12 a b c	13 a b c	14 a b c	15 a b c	16 a b c
17 a b c	18 a b c	19 a b c	20 a b c	21 a b c	22 a b c	23 a b c
24 a b c	25 a b c	26 a b c	27 a b c	28 a b c	29 a b c	30 a b c

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

0-No Symptoms
1-Eye Irritation
2-Headache
3-Runny Nose
4-Sinusitis or Sinus Problem
5-Aching Muscles
6-Chest Discomfort or Chest Pain
7-Dry Scratchy Throat
8-Sore Throat
9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED {
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia

27-Out of Neighborhood for all 24 hours.

OCTOBER 1978

sunday	monday	tuesday	wednesday	thursday	friday	saturday
1 a b c	2 a b c	3 a b c	4 a b c	5 a b c	6 a b c	7 a b c
8 a b c	9 a b c	10 a b c	11 a b c	12 a b c	13 a b c	14 a b c
15 a b c	16 a b c	17 a b c	18 a b c	19 a b c	20 a b c	21 a b c
22 a b c	23 a b c	24 a b c	25 a b c	26 a b c	27 a b c	28 a b c
29 a b c	30 a b c	31 a b c				

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

0-No Symptoms
1-Eye Irritation
2-Headache
3-Runny Nose
4-Sinusitis or Sinus Problem
5-Aching Muscles
6-Chest Discomfort or Chest Pain
7-Dry Scratchy Throat
8-Sore Throat
9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia

27-Out of Neighborhood for all 24 hours.

NOVEMBER 1978

sunday	*monday*	*tuesday*	*wednesday*	*thursday*	*friday*	*saturday*
			1 a b c	2 a b c	3 a b c	4 a b c
5 a b c	6 a b c	7 a b c	8 a b c	9 a b c	10 a b c	11 a b c
12 a b c	13 a b c	14 a b c	15 a b c	16 a b c	17 a b c	18 a b c
19 a b c	20 a b c	21 a b c	22 a b c	23 a b c	24 a b c	25 a b c
26 a b c	27 a b c	28 a b c	29 a b c	30 a b c		

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

0-No Symptoms
1-Eye Irritation
2-Headache
3-Runny Nose
4-Sinusitis or Sinus Problem
5-Aching Muscles
6-Chest Discomfort or Chest Pain
7-Dry Scratchy Throat
8-Sore Throat
9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED:
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia

27-Out of Neighborhood for all 24 hours.

DECEMBER 1978

sunday	*monday*	*tuesday*	*wednesday*	*thursday*	*friday*	*saturday*
					1 a b c	2 a b c
3 a b c	4 a b c	5 a b c	6 a b c	7 a b c	8 a b c	9 a b c
10 a b c	11 a b c	12 a b c	13 a b c	14 a b c	15 a b c	16 a b c
17 a b c	18 a b c	19 a b c	20 a b c	21 a b c	22 a b c	23 a b c
24 a b c	25 a b c	26 a b c	27 a b c	28 a b c	29 a b c	30 a b c
31 a b c						

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

0-No Symptoms
1-Eye Irritation
2-Headache
3-Runny Nose
4-Sinusitis or Sinus Problem
5-Aching Muscles
6-Chest Discomfort or Chest Pain
7-Dry Scratchy Throat
8-Sore Throat
9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia

27-Out of Neighborhood for all 24 hours.

JANUARY 1979

sunday	monday	tuesday	wednesday	thursday	friday	saturday
	1 a b c	2 a b c	3 a b c	4 a b c	5 a b c	6 a b c
7 a b c	8 a b c	9 a b c	10 a b c	11 a b c	12 a b c	13 a b c
14 a b c	15 a b c	16 a b c	17 a b c	18 a b c	19 a b c	20 a b c
21 a b c	22 a b c	23 a b c	24 a b c	25 a b c	26 a b c	27 a b c
28 a b c	29 a b c	30 a b c	31 a b c			

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

0-No Symptoms
1-Eye Irritation
2-Headache
3-Runny Nose
4-Sinusitis or Sinus Problem
5-Aching Muscles
6-Chest Discomfort or Chest Pain
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8-Sore Throat
9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED:
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia

27-Out of Neighborhood for all 24 hours.

FEBRUARY 1979

sunday	monday	tuesday	wednesday	thursday	friday	saturday
				1 a b c	2 a b c	3 a b c
4 a b c	5 a b c	6 a b c	7 a b c	8 a b c	9 a b c	10 a b c
11 a b c	12 a b c	13 a b c	14 a b c	15 a b c	16 a b c	17 a b c
18 a b c	19 a b c	20 a b c	21 a b c	22 a b c	23 a b c	24 a b c
25 a b c	26 a b c	27 a b c	28 a b c			

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

0-No Symptom
1-Eye Irritation
2-Headache
3-Runny Nose
4-Sinusitis or Sinus Problem
5-Aching Muscles
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9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED:
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia

27-Out of Neighborhood for all 24 hours.

MARCH 1979

sunday	monday	tuesday	wednesday	thursday	friday	saturday
				1 a b c	2 a b c	3 a b c
4 a b c	5 a b c	6 a b c	7 a b c	8 a b c	9 a b c	10 a b c
11 a b c	12 a b c	13 a b c	14 a b c	15 a b c	16 a b c	17 a b c
18 a b c	19 a b c	20 a b c	21 a b c	22 a b c	23 a b c	24 a b c
25 a b c	26 a b c	27 a b c	28 a b c	29 a b c	30 a b c	31 a b c

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

0-No Symptoms
1-Eye Irritation
2-Headache
3-Runny Nose
4-Sinusitis or Sinus Problem
5-Aching Muscles
6-Chest Discomfort or Chest Pain
7-Dry Scratchy Throat
8-Sore Throat
9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia

27-Out of Neighborhood for all 24 hours.

APRIL 1979

sunday	monday	tuesday	wednesday	thursday	friday	saturday
1 a b c	2 a b c	3 a b c	4 a b c	5 a b c	6 a b c	7 a b c
8 a b c	9 a b c	10 a b c	11 a b c	12 a b c	13 a b c	14 a b c
15 a b c	16 a b c	17 a b c	18 a b c	19 a b c	20 a b c	21 a b c
22 a b c	23 a b c	24 a b c	25 a b c	26 a b c	27 a b c	28 a b c
29 a b c	30 a b c					

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

0-No Symptoms
1-Eye Irritation
2-Headache
3-Runny Nose
4-Sinusitis or Sinus Problem
5-Aching Muscles
6-Chest Discomfort or Chest Pain
7-Dry Scratchy Throat
8-Sore Throat
9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia

27-Out of Neighborhood for all 24 hours.

MAY 1979

sunday	monday	tuesday	wednesday	thursday	friday	saturday
		1 a b c	2 a b c	3 a b c	4 a b c	5 a b c
6 a b c	7 a b c	8 a b c	9 a b c	10 a b c	11 a b c	12 a b c
13 a b c	14 a b c	15 a b c	16 a b c	17 a b c	18 a b c	19 a b c
20 a b c	21 a b c	22 a b c	23 a b c	24 a b c	25 a b c	26 a b c
27 a b c	28 a b c	29 a b c	30 a b c	31 a b c		

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13-Rash
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16-Head Cold
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18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED:
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia

27-Out of Neighborhood for all 24 hours.

JUNE 1979

sunday	monday	tuesday	wednesday	thursday	friday	saturday
					1 a b c	2 a b c
3 a b c	4 a b c	5 a b c	6 a b c	7 a b c	8 a b c	9 a b c
10 a b c	11 a b c	12 a b c	13 a b c	14 a b c	15 a b c	16 a b c
17 a b c	18 a b c	19 a b c	20 a b c	21 a b c	22 a b c	23 a b c
24 a b c	25 a b c	26 a b c	27 a b c	28 a b c	29 a b c	30 a b c

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10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
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15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED:
22-Ear Infection
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24-Bronchitis
25-Influenza
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JULY 1979

sunday	*monday*	*tuesday*	*wednesday*	*thursday*	*friday*	*saturday*
1 a b c	2 a b c	3 a b c	4 a b c	5 a b c	6 a b c	7 a b c
8 a b c	9 a b c	10 a b c	11 a b c	12 a b c	13 a b c	14 a b c
15 a b c	16 a b c	17 a b c	18 a b c	19 a b c	20 a b c	21 a b c
22 a b c	23 a b c	24 a b c	25 a b c	26 a b c	27 a b c	28 a b c
29 a b c	30 a b c	31 a b c				

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

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2-Headache
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4-Sinusitis or Sinus Problem
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8-Sore Throat
9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
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MEDICALLY DIAGNOSED:
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23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia

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AUGUST 1979

sunday	monday	tuesday	wednesday	thursday	friday	saturday
			1 a b c	2 a b c	3 a b c	4 a b c
5 a b c	6 a b c	7 a b c	8 a b c	9 a b c	10 a b c	11 a b c
12 a b c	13 a b c	14 a b c	15 a b c	16 a b c	17 a b c	18 a b c
19 a b c	20 a b c	21 a b c	22 a b c	23 a b c	24 a b c	25 a b c
26 a b c	27 a b c	28 a b c	29 a b c	30 a b c	31 a b c	

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

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2-Headache
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4-Sinusitis or Sinus Problem
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7-Dry Scratchy Throat
8-Sore Throat
9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia

27-Out of Neighborhood for all 24 hours.

SEPTEMBER 1979

sunday	*monday*	*tuesday*	*wednesday*	*thursday*	*friday*	*saturday*
						1 a b c
2 a b c	3 a b c	4 a b c	5 a b c	6 a b c	7 a b c	8 a b c
9 a b c	10 a b c	11 a b c	12 a b c	13 a b c	14 a b c	15 a b c
16 a b c	17 a b c	18 a b c	19 a b c	20 a b c	21 a b c	22 a b c
23 a b c	24 a b c	25 a b c	26 a b c	27 a b c	28 a b c	29 a b c
30 a b c						

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

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7-Dry Scratchy Throat
8-Sore Throat
9-Dry Cough
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11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED {
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia
}

27-Out of Neighborhood for all 24 hours.

Appendix F

SYMPTOM SURVEILLANCE

OMB No. 158-S77012
Expires September 1980

ARD STUDY

SYMPTOM QUESTIONNAIRE

Name of Head of Household ______________________

ID: ______________________

Period: ______________________

Start Date: ______________________

I. Obtain the following symptom information for each family member	Ⓐ Ⓙ Ⓢ Ⓕ	Ⓙ Ⓢ Ⓕ	Ⓙ Ⓢ Ⓕ	Ⓙ Ⓢ Ⓕ	Ⓙ Ⓢ Ⓕ
NO SYMPTOMS	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
1 Eye Irritation	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
2 Headache	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
3 Runny Nose	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
4 Sinusitis or sinus problem	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
5 Aching Muscles	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
6 Chest Discomfort or Pain	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
7 Dry Scratchy Throat	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
8 Sore Throat	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
9 Dry Cough	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
10 Cough With Phlegm	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
11 Shortness of Breath	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
12 Wheezing or Whistling	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
13 Rash	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
14 Fever	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
15 Restricted Activity	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
16 Head Cold	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
17 Chest Cold	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
18 Croup	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
19 Asthma Attack	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
20 Hay Fever	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
21 Sought Medical Advice	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
MEDICALLY DIAGNOSED { 22 Ear Infection	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
23 Bronchiolitis	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
24 Bronchitis	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
25 Influenza	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
26 Pneumonia	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ
Out of neighborhood all 24 hours	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ	Ⓢ Ⓜ Ⓣ Ⓦ Ⓣ Ⓕ Ⓢ

II. The following questions should be asked only of the primary respondent (preferably the mother):

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
How many hours did you use your oven?	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know
How many hours did you use your stove top burners?	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know
How many hours did you spend in the open air between ______ and ______ PM?	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know	⓪ ZERO ① 0-1 ② 1-2 ③ 2-3 ④ 3-4 ⑤ >4 ⑨ Do not know

Interviewer	
⓪	⓪
①	①
②	②
③	③
④	④
⑤	⑤
⑥	⑥
⑦	⑦
⑧	⑧
⑨	⑨

Date Called			
Mo		Day	
⓪	⓪	⓪	⓪
①	①	①	①
	②	②	②
	③	③	③
	④		④
	⑤		⑤
	⑥		⑥
	⑦		⑦
	⑧		⑧
	⑨		⑨

RESPONDENT CODE	
⓪	⓪
①	①
②	②
③	③
④	④
⑤	⑤
⑥	⑥
⑦	⑦
⑧	⑧
⑨	⑨

FAMILY I.D.					
⓪	⓪	⓪	⓪	⓪	⓪
①	①	①	①	①	①
②	②	②	②	②	②
③	③	③	③	③	③
④	④	④	④	④	④
⑤	⑤	⑤	⑤	⑤	⑤
⑥	⑥	⑥	⑥	⑥	⑥
⑦	⑦	⑦	⑦	⑦	⑦
⑧	⑧	⑧	⑧	⑧	⑧
⑨	⑨	⑨	⑨	⑨	⑨

PG	⓪	①	②	③	④	⑤	⑥	⑦	⑧	⑨
	⓪	①	②	③	④	⑤	⑥	⑦	⑧	⑨
CR	⓪	①	②	③	④	⑤	⑥	⑦	⑧	⑨
		①	②	③	PAGE					

Ⓔ Ⓜ

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SYMPTOM SURVEILLANCE INTERVIEWING INSTRUCTIONS

ACUTE RESPIRATORY DISEASE (ARD) STUDY

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Senior Research Epidemiologist

Population Studies Division
Health Effects Research Laboratory
United States Environmental Protection Agency
Research Triangle Park, North Carolina

August 1978

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FORWARD

This booklet has been prepared as a resource and reference for Acute Respiratory Disease Study telephone interviewers. Each interviewer should know it thoroughly before beginning to conduct interviews.

It is crucial to the success of the study for data to be collected and recorded in a uniform, consistent manner. Regular and frequent review of these instructions will assist in achieving that goal.

INTRODUCTION

The Acute Respiratory Disease (ARD) Study is designed to evaluate the question, "Will people living in communities with high levels of nitrogen dioxide (NO_2) experience more frequent and more severe ARD symptoms than people who live in communities where NO_2 levels are relatively lower?" Nitrogen dioxide is a gas which is emitted into a community's atmosphere from various sources, chiefly industrial activities and automobile exhausts. The gas itself is irritative and its conversion products are thought to be injurious (either temporarily or permanently) to the respiratory mucosa of exposed persons. Thus, it would be expected that when persons who have been exposed to frequent and high levels of NO_2 encounter the causative agents of acute respiratory disease, the frequency and severity of such illnesses would be increased.

For the purposes of this study, acute respiratory disease is defined as any infectious or non-infectious process involving the respiratory tract that begins suddenly (acute) and has a clearly defined termination point. Such illnesses occur in healthy individuals, as well as in persons with chronic respiratory diseases, such as chronic bronchitis, emphysema and asthma. Persons with chronic respiratory disease have some respiratory disease symptoms (for example, cough with phlegm) almost constantly. When they contract an acute infection, their chronic symptoms simply become more severe and the acute illness usually continues for a longer period of time than a similar acute illness in a person without chronic lung disease.

There are three ARD Study phases, the first two of which have been completed. They are:

Phase 1. Pre-study air quality measurement.
Phase 2. Study population recruitment survey.
Phase 3. Symptom recording.

Between February 1977 and May 1977 air monitoring instruments recorded daily measurements of NO_2 and other pollutants in the study communities for the first phase of the study. The communities selected for study are: West Los Angeles, Garden Grove, Glendora, and Upland. The purpose of this pre-study monitoring was to ascertain air quality differences between these communities.

The survey to recruit study families (Phase 2) was conducted from May 22 to mid-August, 1978. Interviewers visited approximately 3,000 families with elementary school children and completed an ARD Study Background Questionnaire for each family. From the responses to questions in the questionnaire, 350 families in each community were selected to participate in Phase 3 of the study.

During the last half of August, after the recruitment survey was completed, all questionnaires of families eligible for Phase 3 were carefully examined. By a complex process, families were selected by considering the following selection factors: family composition, fuel used for cooking, and dwelling type.

The families selected in each of the four communities were matched as closely as possible on the basis of these factors. The matching process resulted in four study groups composed of approximately equal numbers of families having two parents, one parent, no preschool children, one or more preschoolers. The groups were also matched by percentage using gas or electricity for cooking and percentage residing in single or multiple family dwellings.

On September 1, 1978, the selection decisions were sent to all families eligible for the symptom reporting phase of the study. Those not selected were sent a letter thanking them for their cooperation with an explanation of the selection process. The letter sent to selected families enclosed a calendar (pages A1-A17) for one family member to record the symptoms of all family members each day. The mailing date, September 1, was used to avoid possible mail delays related to the Labor Day holiday, with delivery expected by September 5.

Symptom Recording (Phase 3) will begin September 11, 1978. Once a week beginning September 18, 1978, an interviewer will telephone the family member who agrees to serve as respondent to discuss illnesses that occurred the previous week and to record the respondent's reports on an optical scan data processing form. Symptom data and concurrent air quality data collection is expected to continue for 52 weeks.

PRE-SURVEILLANCE TELEPHONE CALLS TO STUDY FAMILIES

During the period September 11 through 15, you will make a pre-surveillance telephone call to each study family assigned to you for the first six weeks of symptom reporting. You will be able to make these preliminary calls at a leisurely pace during this five-day period. The pre-surveillance calls will also provide you the opportunity to become acquainted with your assigned families and to set up your call record system.

The purposes of the pre-surveillance calls are:

- To alert the respondents to the start of the study.
- To establish the time the respondent can best be reached by phone each week during surveillance.
- To correct, if necessary, errors or changes in telephone numbers that occurred after the recruitment interviews.
- To identify initial attrition due to families moving or reversing their previous agreement to participate in the study.
- To identify changes that occurred after the recruitment interview in the composition of the family, jobs of the parents, smoking patterns of family members, or household equipment.
- To ascertain that the respondent has received a study calendar and to review its use.
- To identify the needs for replacing families that fail to begin surveillance.

PRE-SURVEILLANCE CALL RESPONDENTS

Whenever possible the pre-surveillance call (and later the surveillance calls) should be conducted with the mother or female head of the household. If the mother is not at home at the time of the pre-surveillance call, determine when she will be and arrange to call back. It will reduce your workload when you begin making surveillance calls if the person who will report symptoms to you later can be reached as the pre-surveillance call respondent. It will be necessary, however, to be flexible on this call and in those cases where the symptom-reporting respondent is out-of-town, in the hospital, or for some other reason cannot be reached during the five-day pre-surveillance calling period, the father or one of the other preferred respondents can be substituted for this call. See page 12 for the description of preferred respondents.

PRE-SURVEILLANCE CALL OUTLINE

Each interview must, of course, be adapted to circumstances existing at the time the call is made. To assist new interviewers, examples are given in the following outline wherever possible that can be followed in most interviews.

There are two points at which you should terminate the pre-surveillance interview before it is completed. The first of these will be at any time during the interview that the respondent voluntarily informs you that the family cannot or will not participate in the weekly surveillance. You should never, however, ask the respondent if she will participate, or suggest to the respondent in any way that she might not wish to participate. The second point at which the interview should be terminated will be when, in checking the current address of the family, you find that the family no longer lives within the study area.

Interview Part 1 - Introduction

During this first part of the pre-surveillance interview you should:

a. Introduce yourself by name.
b. Identify the name and sponsors of the study.
c. Ask to speak with the female head of the household.

An example of the usual introduction is:

> "Hello, I'm Marsha Hill. I'm one of the interviewers for the Acute Respiratory Disease Study being conducted for the Environmental Protection Agency by the Copley International Corporation and the University of California at Riverside. Are you Mrs. Connie Lee?"

You may use this introduction as it is written or adapt it to your own words if you wish.

Interview Part 2 - Brief Review of the Study

This part of the interview should include:

a. Reminder of previous recruitment interview.
b. Verification that a calendar was received.
c. Reminder of calendar use.

For example:

> "Mrs. Lee, you will recall that one of our interviewers visited your home on June 1. She filled out a questionnaire about your family for a study of the effects of environmental pollutants on health. We mailed study calendars last week to the families that agreed to participate in the study. Did you receive your calendar?..............This calendar is for you to note the kind of symptoms that members of your family may develop and on what days those symptoms are present. We know from past experience that unless written notes like this are kept, it is very difficult to recall exactly when and what kind of symptoms each person in the family has had. When I call you each week, I will ask you to refer to your calendar as you tell me about the health of each family member during the previous week. Do you have any questions about how to use the calendar?

If the respondent states a calendar has not been received, tell her that you will mail one immediately and ask her to begin making notes of symptoms on it beginning September 17.

Interview Part 3 - Establishing a Time for Surveillance Calls

All surveillance calls will be made on either Monday or Tuesday each week. During the pre-surveillance call, a time on either of these days should be determined that is most convenient for the respondent between the hours of 8 AM and 8 PM. An example of this part of the interview is:

> "Mrs. Lee, we will make our regular calls to all study families on either Monday or Tuesday each week. Which of these days is best for you?.........What time during the day would you like me to call?

Interview Part 4 - Updating the Background Questionnaire

Some of the study families supplied information for the Background Questionnaire as long ago as late May or early June 1978. Therefore, each family's questionnaire must be verified for changes that might have occurred since the time of the recruitment interview. Keep the Xerox copy of the family's questionnaire in front of you for easy reference while you do this verification. It is not necessary to read every question to the respondents.

If the family has moved to an address within the monitoring zone, verify all items listed below for families that have not moved and, in addition, obtain new answers to all questions in Section II. It will also be necessary to note for moved families that the answer to Question 1, Section I, should be changed to "< 1 year." For a family that has not moved since the recruitment interview, the following items should be verified:

Updating the Front Page

Check to see that the surname of the head of the household has not changed. The mother or father might be different people at the time of this call, or the mother might have remarried.

Verify the street address and name of the city for mailing purposes. If the family has moved, check the new address to ascertain that it is within the study area. If it is not, explain to the respondent that the study can be done only with families living within the zone that is being monitored. Since the new address is not within the zone, the health data of the family cannot be analyzed. Thank her for her cooperation and terminate the interview.

Verify the telephone number and ask if the one listed on the questionnaire is best to use for surveillance calls, or would the respondent prefer to be called at another number.

Updating Section I

It will be necessary to ask for answers to Questions 4 through 7 if a new parent has become a member of the household or if one of the parents died or left the household since the recruitment interview.

Updating Section II

Verify for changes made in the home (pages 6 and 7 of the questionnaire). It is not necessary to ask every question. A suggested approach is:

> "Since our interviewer visited you, have you made any structural changes in your home, such as adding a room or garage or installing a fireplace?..............Have you replaced, modified or newly installed any home equipment, such as a heating system or water heating system, air conditioning, or electrostatic precipitator?

Verify for changes in the jobs of the mother and father (pages 8 and 9 of the questionnaire). If either parent has changed jobs or there is a new parent, it will be necessary to obtain answers to all questions on pages 8 and 9.

Updating Section III

Ask if there are any new members living in the household since the interviewer visited. For example, a baby might have been born in the interim, a child adopted, or someone who has been away at school or in the armed forces has returned. If so, obtain the information needed for all columns of Section III for the new member.

Ask if there are any members who have left the home. There is the possibility that a family member is now living elsewhere or a member has died since the family was first interviewed.

Ask if there have been any changes in the cigarette smoking habit of any family member.

Interview Part 5 - Conclusion

Ask the respondent if she has any questions about the study that has not been answered, thank her for her cooperation, and tell her you will call next week on the day and at the time she has designated.

NUMBER OF ATTEMPTS TO COMPLETE PRE-SURVEILLANCE CALLS

By judicious selection of time to call, you will, in most cases, successfully contact families on the first or second attempt. If the first attempt is unsuccessful (i.e. the phone rings but there is no answer), the probability of success will be increased by varying the times at which subsequent attempts are made. The following is an example of how this can be done:

1st attempt:	Between 8 AM and 5 PM any weekday.
2nd attempt:	In the afternoon (1-5) if 1st attempt was in the morning (8-12) or vice versa. This attempt should be on a day of the week other than the day the first attempt was made.
3rd attempt:	Any weekday and hour between 8 AM and 5 PM, but hour and day of week must differ from attempts 1 and 2.
4th attempt:	In the afternoon (1-5) if the 3rd attempt was in the morning (8-12) or vice versa, but a different hour and day of week from the previous attempts.
5th attempt:	During evening hours 5 to 8 PM.
6th attempt:	Saturday or Sunday.

There is no reason that the above illustrated example should be followed rigidly. You may save considerable time, effort, and money by making the first two attempts during a weekday and the third attempt during the evening hours (5-8 PM). Evening calls will be most successful if they are made before 5:30 or after 6:30 when the family will probably not be occupied with the evening meal. Evening calls should not be made after 8 PM when many parents are out for the evening.

After the second attempt, check the telephone number for accuracy with the telephone book or with the information operator before continuing with additional attempts. At least six attempts should be made before concluding that the family is out-of-town and cannot be reached. When this conclusion is reached or you find the telephone has been disconnected or there is no phone, the family's record should be given to your supervisor so that a replacement family can be selected.

RECORDING PRE-SURVEILLANCE CALLS

A "Pre-Surveillance Telephone Call Worksheet" should be prepared for every study family. This Worksheet will provide you a means for recording the times you attempted to contact the family and what was accomplished when the call was completed. A copy of the Worksheet will be sent to Data Processing for those families whose Background Questionnaires require updating. The Worksheet is shown on pages A18-A21 and instructions for its use on pages A22-A24.

On the "Interviewer's Record Card" (see page A30) note in the "R code" column the number of the family member who has served as the respondent for the pre-surveillance call. If a substitute respondent is used, it will be necessary on the first surveillance call for you to again review the proper use of the calendar with the family's regular respondent.

SURVEILLANCE TELEPHONE INTERVIEWING

All of the work described to this point has been directed toward preparing for the study goal of recording ARD symptoms that occur in a large group of people over a period of time during which the air quality to which they are exposed is also being monitored. The remainder of this booklet describes the methods to be followed in collecting the symptom data.

SURVEILLANCE SCHEDULE

Each study family will be called on either Monday or Tuesday each week with the exception of Study Weeks Nos. 15, 16, 37, and 51. These four are Monday-holiday weeks (Christmas, New Year's, Memorial Day and Labor Day), when calls that are usually made on Monday will be made on Wednesday instead. The ARD Study Surveillance Schedule is shown on Pages A25 and A26.

If there is no answer to a call made at the time the respondent has designated, you should make additional attempts at different times during the day or evening to complete the call. Failure to reach the respondent during the two-day calling period should be referred to your supervisor. The latter, after evaluating the family's response record, will decide whether you should continue efforts to complete the call or drop the family from the study.

The reason for adhering closely to these two days for calling is to reduce errors in data due to faulty parental recall. Although we ask people to keep a daily written calendar of illness events, we know from previous studies that only a few will continue this recording during a long period of time. Many will simply report illnesses they remember that occurred during the previous week. It is well established that the accuracy of recall is inversely related to the interval between an event and the time the event is reported (i.e. the shorter the interval, the more accurate the recall).

All telephone interviews must be conducted in the ARD Study Office; none will be allowed in an interviewer's home. There are three reasons for this. First, under the Federal Privacy Act, all study participants were guaranteed confidentiality of data they provide. Therefore, no study records may be removed from the study office. Second, a large portion of the calls will involve toll charges, the cost of which will be covered only on the office phones installed for this purpose. Third, the office locus for interviewing eliminates the possibility of interruptions that could occur in the home. There will be enough such interruptions from the respondent's side; there must be none from the interviewer's side for good relationships and good interviewing to be maintained.

RESPONDENTS

The mother or female guardian is the preferred respondent for reporting symptoms of illness. She is usually the family member who can most accurately answer the questions for all members of the family. If there is no mother or female guardian, the next preferred respondent is the father or male guardian. If neither parent can serve as respondent, one of the following who resides permanently in the home may be asked to be the respondent: a grandmother, aunt, grandfather, or uncle (in that order). Whoever is selected as the respondent must have an intimate relationship with all members of the family so that he/she will be able to answer questions about symptoms for all family members. The selected respondent must, of course, be able to speak and understand English.

Not acceptable as respondents are: children of any age, baby sitters, or occasional visiting relatives and other visitors in the home.

Once the respondent is selected, that person should report symptoms every week and only infrequently may a substitute respondent be used. There may be a few occasions, when the selected respondent is ill or away from the home for various reasons, that a substitute must be used. It is well established that data reflect changes in respondents; frequent changes result in data that may be useless for analysis. Frequent use of substitute respondents may make it necessary to drop the family from the study. Respondent consistency will be analyzed periodically to make that decision.

INTERVIEWER ASSIGNMENTS

Families will be assigned to interviewers by a random method. Each interviewer will have approximately 100 families assigned to her at the beginning of the study and they will be distributed fairly evenly among the four study communities.

At six-week intervals throughout the study, families will be reassigned, again randomly and with the four-community distribution. It is very likely that by random selection your reassigned families will include some that you interviewed early in the study and then you find them on your reassignment list two or three assignment periods later. It is also possible that a few families may be reassigned to you for two contiguous six-week periods. If this occurs, you may continue to interview such families through the second assignment period. However, if you find at any time during the study when there is a reassignment that your new assignment includes a family you have been interviewing during the immediately preceding two assignment periods, call that fact to the attention of your supervisor. The supervisor will replace the family by selecting a family from another interviewer's assignment. In other words, twelve weeks is the maximum continuous period of time you may interview a family.

THE SURVEILLANCE INTERVIEW

This section describes how a surveillance interview should be conducted. It will be necessary in the description to refer to the "Interviewer Record Card" and to "The ARD Study Symptom Questionnaire." Both of these records will be explained in the two succeeding sections of this booklet. Read through this section and the next two sections rapidly and then reread this section slowly after you become acquainted with the methods to be used in recording interviews.

Weekly interviewing for symptom data requires the highest degree of skill of the professional interviewer. For the collected data to be useful, you must maintain a high level of data collection accuracy and consistency and must encourage and stimulate your respondents' interest in and sense of value of the study.

Immediately prior to placing the telephone call, examine your card record for the family to refresh your memory of circumstances peculiar to that family. You should especially examine your notes for the previous call to look for illnesses that were present on the last day of the previous reporting period. If there were any, specifically ask the respondent whether the illness continued into the current reporting period.

Many respondents will be encouraged to continue to use the calendar they have been furnished if, after your introductory greeting and before asking about symptoms of family members, you routinely ask the respondent each week to get her calendar and refer to it during the discussion of illnesses that may have occurred.

Of greatest interest to the respondent will be overt illnesses that her family has had. Therefore, you will capitalize on this interest by encouraging the respondent in the early part of the interview to describe such illnesses. Respiratory illnesses, the concern of the ARD Study, will not, however, be the only illness in the family. It may be necessary on occasion to allow the respondent to describe a non-respiratory illness or injury before the respondent will be able to turn her attention to what may be, to her, a less important respiratory ailment. You must decide how much time can be allowed for discussion of non-study-related illnesses or injuries and use your skill in diverting the respondent to reporting respiratory symptoms.

When the respondent reports that an overt respiratory illness occurred, it will be more interesting to her and less a chore for you if you encourage the respondent to volunteer a description of the illness rather than for you to read to her the symptoms and diagnoses that are listed on the ARD Study Symptom Questionnaire. This can be done by asking a non-specific question, such as "What were Johnnie's symptoms?" As the respondent describes the illness, you should blacken the appropriate circles on the questionnaire for the symptoms reported. Then, after the respondent completes her description, probe for additional symptoms listed on the questionnaire that the respondent may have neglected to mention. To avoid confusion and data errors, complete the history of each family member who experienced an illness before beginning questioning for symptoms of another ill member. Occasionally your card record will show that at the time of the previous interview a family member had symptoms on the last day of the previous surveillance week. In such cases, specifically ask if the symptoms persisted into the current surveillance week.

After the respondent has reported all of the overt illnesses, ask about symptoms listed on the questionnaire in relation to the remaining family members who were not overtly ill. Unless this is done, a single, seemingly minor symptom, can be missed. It will be less tedious for both the respondent and you if this is done by grouping the symptoms and asking about each symptom group in relation to the group of remaining non-ill family members. The following symptom grouping is suggested:

1. Eye irritation, headache, runny nose, or sinus trouble.
2. Aching muscles, chest pain, or chest discomfort.
3. Dry, scratchy or sore throat, cough, shortness of breath, or wheezing/whistling breath sounds.
4. Rash, fever, or restricted activity for any reason.
5. Cold, croup, asthma attack, or hay fever.
6. Sought medical advice for any reason.
7. Any family member (ill or well) out of neighborhood all 24 hours on any day.

Pause after asking about each symptom group to allow the respondent to answer. If the respondent responds affirmatively, ask which of the symptoms in the group occurred, which of the group of remaining non-ill members experienced the symptom, and on what day(s) the symptom occurred. For some symptom groups, it will also be necessary for you to determine the specific type of symptom, e.g. if the respondent indicates that her husband had a cough, ask, "Was it a dry cough or a cough with phlegm?"

To illustrate the points discussed in the preceding paragraphs, a hypothetical family of four can be used: Mr. and Mrs. John Hawkins, their son, Tommy, and daughter, Carol.

A TYPICAL SURVEILLANCE INTERVIEW

Interviewer: Hello, Mrs. Hawkins, this is Katherine Riggs, Copley International Corporation.

Respondent: Hi, I knew when the phone rang that it was you calling.

Interviewer: Do you have your calendar at the phone or should I wait until you can get it?

Respondent: I've got it right here with me.

Interviewer: Good. How long did Carol continue to have her head cold that you said she still had on Saturday, September 30?

Respondent: Well, on Sunday she still had a little bit of a runny nose but by last Monday she didn't have any symptoms.

Interviewer: How was she the rest of this past week? Did she develop any new illnesses?

Respondent: No.

Interviewer: Good. Was anybody else ill in the family this past week?

Respondent: Well, my husband had another bout with kidney stones.

Interviewer: Was it as bad as the last time?

Respondent: Just about. We were up all night with it and the doctor said he may eventually have to operate.

Interviewer: I'm sorry to hear that. What about respiratory illnesses--did anybody in the family have symptoms?

Respondent: Yes, Tommy caught Carol's head cold.

Interviewer: What were his symptoms and on what days did he have them?

Respondent: He had a head cold and an ear infection. On Tuesday he began with a runny nose and he still has it today. Then, he had a cough on Wednesday, Thursday and Friday but it stopped on Saturday and he hasn't had it since. The pain in his ear was bad.

Interviewer: On what days did he have the ear pain and did you take him to the doctor for it?

Respondent: It began on Wednesday and got real bad on Thursday and so I took him to the doctor Thursday afternoon. The doctor said it was an ear infection from the head cold and gave him a shot and some medicine to take later. The pain was better on Friday and gone by Saturday.

Interviewer: Was Tommy's cough dry or did he get up phlegm from his chest when he coughed?

Respondent: It was dry.

Interviewer: Did he have eye irritation, a headache, or sinusitis?

Respondent: Well, yes, now that you mention it; he complained of a headache when he started to get sick on Tuesday.

Interviewer: How about aching muscles or chest pain or discomfort?

Respondent: No.

Interviewer: Did he have dry, scratchy or sore throat, or any shortness of breath or wheezing/whistling sounds to his breathing?

Respondent: No.

Interviewer: How about a fever or rash or did his activity pattern change, like staying home from school or staying in bed when he is usually up?

Respondent: He didn't have any fever or rash but I kept him home from school on Thursday when the ear pain was so bad.

Interviewer: Did the doctor say he had any of the conditions listed on your calendar other than ear infection, like bronchiolitis, bronchitis, influenza, or pneumonia?

Respondent: No, only the ear infection with the head cold.

Interviewer: Well, I'm glad it didn't get any worse. I hope by the time I call you next week the runny nose problem will be over. Now, regarding you and your husband--did either of you have eye irritation, headache, runny nose, or sinus trouble?

Respondent: No.

Interviewer: Did you or your husband have aching muscles, chest pain or chest discomfort any day last week?

Respondent: No.

Interviewer: How about a dry, scratchy or sore throat, a cough, shortness of breath, or wheezing/whistling breathing sounds?

Respondent: Well, my husband had a bad dry cough all day on Wednesday but it didn't develop into a cold or anything; he had it just that day.

Interviewer: I'm glad it was just a one-day thing for him. Did either of you have a rash, fever or restricted activity any day last week?

Respondent: No.

Interviewer: How about a cold, croup, asthma or hay fever?

Respondent: No.

Interviewer: Did you or your husband have to go to the doctor last week?

Respondent: No.

Interviewer: Was anybody in the family out of your home neighborhood all 24 hours any day last week?

Respondent: My husband went on a business trip. He left very early Friday morning and didn't get back until about midnight. I guess he left about 6 AM. Would you call that all 24 hours?

Interviewer: It's pretty close to 24 hours, so we'll call it that. Now, I'm going to ask about your hours of cooking each day last week. How many hours did you use your oven?

Respondent: I only used the oven once, on Saturday when I baked a ham for about three hours.

Interviewer: How many hours did you use your stove top burners each day?

Respondent: I cook only in the evening. We eat a cold breakfast and eat hot lunches at school and at work. Last week I used the top burners about one hour each evening for cooking supper, except on Saturday when I had the baked ham. Then, I cooked a vegetable casserole with the ham in the oven and didn't use the top burners at all.

Interviewer: What about lunch on Saturday, did you cook then?

Respondent: No. My husband ate at work and the kids and I had sandwiches and milk for lunch.

Interviewer: How many hours did you spend in the open air between 12 noon and 6 PM each day last week?

Respondent:	Well, let's see, I was out about a half-hour every day except Saturday when I cut the grass. That took about two and a half hours.
Interviewer:	Thank you so much, Mrs. Hawkins. It's always so nice to talk with you. I'll call you again next week at this same time.
Respondent:	It's good to talk with you, too. Goodbye.
Interviewer:	Goodbye.

THE ARD STUDY SYMPTOM QUESTIONNAIRE

The symptom questionnaire provides the means for mechanically processing histories of symptoms that respondents report weekly to you by phone. A set of questionnaires, one for each study family, will be pre-printed by computer for each surveillance week. There is a copy of the questionnaire on page A27, reduced in size, to illustrate its use.

At first glance, the questionnaire may seem complicated but it is actually quite simple. You need merely to blacken appropriate circles in the appropriate columns, for the appropriate days of illness, and on the line for the symptom reported.

Form Design

This single-page questionnaire is an optical scan type form. Thus, it is printed on special paper and in a special format so that the answers you enter can be read mechanically on an optical scanner. The scanner "reads" the entries by electronic sensors and creates a magnetic tape of the data which is then used to prepare computerized files for data analysis.

The scanner reads only carbon marks. Therefore, it is absolutely essential that you make entries in pencil only. If by mistake you use a pen or anything other than a pencil, go over such marks with a pencil.

The scanner reads any pencil marks, made intentionally or by chance, that appear in the circles. Therefore, you must be very careful to avoid making marks anywhere on the form except within the circles. If by accident you make marks or make entries which must be changed, you must be certain to erase them completely.

The scanner reads through the paper. Therefore, a mark on the reverse side of the questionnaire that crosses a circle will be read as an entry for that circle. Thus, you must completely remove from both sides of the questionnaire any mark not intended as an entry for one of the items.

Use only the pencils furnished to you for completing the questionnaires. Darken the circles well so they can be seen clearly by the person who will edit your completed questionnaires. Fill the entire circle completely with your pencil; do not enter an "x", or check mark, or a dot in the center of the circle.

When the completed questionnaires are processed, they are stacked in a holding tray on the optical scanner, from which each is fed mechanically into the scanner. It is important to know that the feeding device works perfectly if the questionnaires are in good condition. If the questionnaires have been torn or creased, the edges of the pages rolled or bent, the machine reading operation bogs down and a great deal of time is wasted and possible errors in data are introduced when forms, torn up in the machine, have to be recopied by hand, and machine adjustments must be made. If a questionnaire is inadvertently damaged, it should be copied over before it is turned in to your supervisor.

Preventive care is essential. Paper clips, which when removed sometimes leave rolled or torn edges on the paper, should not be used. Rubber bands placed around several forms can also tear or roll edges of the sheets as the bands are removed. Never staple questionnaires; staples always leave holes and may tear the paper.

Symptom Column

The symptoms and diagnoses printed in the first column on the left side of the questionnaire are numbered. Those numbers, printed in front of each symptom, are code numbers you will use in making notes of weekly interviews on the 5x8 card record described in the next section of this booklet. The same numbered list of symptoms and diagnoses has been printed on the study calendar so that respondents are aware of the kinds of illness information to be reported.

Note that printed in the first column, Items 1 through 15, are a patient's observations that he usually tells his doctor when he seeks medical care for an illness--his symptoms. Items 16 through 20 are diagnoses; you should make entries for these items when either the physician or a family member makes the diagnosis. Items 22 through 26 are also diagnoses; make entries for them only when a doctor has made the diagnosis. A "doctor" for the purposes of this study is defined as any person trained to give primary or specialized medical care: medical doctors (physicians, M.D.'s), chiropractors, osteopaths, licensed nurse practitioners, licensed doctors' assistants. Decisions regarding what an illness is that are made by practitioners of religious cults, untrained friends or relatives, school nurses, naturopaths, and others who are not professionally qualified in the medical field are not acceptable. When an entry is made for Items 22 through 26, an entry must also be made for Item 21 to record the day the doctor was visited or telephoned for the illness.

The diagnoses (Items 16 through 26) are not mutually exclusive. Therefore, entries could be made for more than one of these items for the same day. For example, a child could have a head cold and with it develop an ear infection as in the Hawkins family illustration on page A27.

Whenever an entry is made for Items 16 through 26 (the diagnoses items) there should also be entries in Items 1 through 15 (the symptom items). The reverse, however, is not necessarily true; that is, symptoms may be reported without a diagnosis. The latter will be the case usually when there is a single symptom or a vague set of symptoms that is not diagnosable. Both of these situations are illustrated in the Hawkins family: Tommy had a set of symptoms that his mother recognized and diagnosed as a head cold, as well as an ear infection which the doctor diagnosed; the father had a dry cough and no diagnosis.

You should record symptoms reported by the respondent and should not volunteer definitions to the respondent. The same is true for the diagnoses, Items 16 through 20. In other words, what is recorded when the ill family member has not sought medical care is what the respondent thinks the condition or symptom is and not what the interviewer tells the respondent it is. What is recorded for Items 22 through 26 is what the doctor told the family member his diagnosis is. Occasionally a respondent will ask what is meant by one of the items listed in the symptom column and also on her calendar. The explanation for these items on Pages A28-A29 will assist you in replying to such questions.

Family Member Columns

The five columns on the right of the symptom column contain seven small circles, one for each day beginning with Sunday of the week reported. Each circle is identified by the first letter of the day printed in its center. One column will be designated for each member of the family. The name and family member number for each person living in the home will be printed by computer at the head of the columns. If there are more than five family members, two forms will be furnished.

As the respondent reports a family member's illness, first locate the column designated for that member. As the respondent reports the ill member's symptoms, locate the reported symptom(s) in the first column and blacken the circle(s) on the line for that symptom(s) in the ill member's column for the day(s) the symptom(s) persisted. To avoid making errors, always place a ruler on the symptom line to be certain you make entries on the proper line. This will be most essential when columns at the far right are being used. It will also be helpful in maintaining accuracy if you always place the form directly in front of you so that you are looking down on it directly.

Recording on the symptom questionnaire must be done as the respondent makes her report to you. Do not make notes of the interview to use later for transcribing to the questionnaire. Even if the greatest care is taken, it is very difficult to avoid transcription errors. More important for you personally, you will be faced with the time-consuming, embarrassing task of calling back when you find you have neglected to note all the facts. Days of the week a symptom occurred, for example, which are very important in the data analysis, must be recorded accurately and can easily be forgotten when merely notes are taken during an interview. Two analyses will be made based on the days you record. One will be the relationship between pollution levels and illness onset (the first day symptoms begin). The second analysis will be exposure in relation to illness severity as measured by length of illness (number of days symptoms persist). Therefore, inaccuracies or omissions in recording symptom days will be reflected in both of these analyses.

Illustration of Recording

The entries on the questionnaire illustrated on Page A27 record the interview illustrated on pages 16-19. The family member names and numbers are printed at the tops of the columns: John 01 (the father), Lucy 02 (the mother), Tommy 03 (the son), and Carol 04 (the daughter). During the interview the respondent reported no symptoms for her husband except a dry cough on Wednesday; the interviewer has blackened the circles for "no symptoms" for all days except Wednesday and the Wednesday circle on the "dry cough" line. For the mother, Lucy, who did not report an illness for herself, the interviewer has blackened all of the circles on the "no symptoms" line. Tommy's symptoms did not begin until Tuesday; therefore, the Sunday and Monday circles on the "no symptoms" line are blackened. To record his symptoms, the interviewer has blackened the Tuesday circle on the "headache" line, Tuesday through Saturday circles on the "runny nose" line, Wednesday through Friday circles on the "dry cough" line, the Thursday circle on the "restricted activity" line, Tuesday through Saturday circles on the "head cold" line, the Thursday circle on the "sought medical care" line, and Wednesday through Friday circles on the "ear infection" line. Carol, the daughter, was reported well except for her runny nose which continued on Sunday from her previous week's illness; thus, the interviewer has blackened the Sunday circle on the "runny nose" line and Monday through Saturday circles on the "no symptoms" line.

At the end of the symptom/diagnosis list there is a line for recording the day(s) a family member was "Out of neighborhood all 24 hours." The answers to this question will be used to estimate ambient pollution exposure of the home/work environment. The word "neighborhood" here means the geographic work/school area as well as the home area. Some family members (usually the father) may have a mobile job which requires travel within a limited, circumscribed area. For example, a trouble-shooter for the Los Angeles power company would move during his working hours throughout the city. He would be considered in his work neighborhood while he is working within Los Angeles. Other persons hold jobs that require a different kind of mobility. An example would be a traveling salesman of a company based in Los Angeles who works some days in the company's Los Angeles office but spends most of his time on trips elsewhere. He would be considered in his work area on the days spent at his Los Angeles office and out of the area when he is traveling elsewhere.

The phrase "all 24 hours" should not be taken literally. What is meant is nearly all (75%) of the 24 hours between midnight and the next midnight. Thus, if the person leaves the home/work neighborhood during the first six (12 midnight to 6 AM) of the 24 hours, record "out of the neighborhood all 24 hours." If he leaves during the last six (6 PM to midnight) of the 24 hours, consider that he is "in the neighborhood all 24 hours." If he has been away and returns during the first six of the 24 hours, consider that he is "in the neighborhood all 24 hours." If he has been away and returns during the last six of the 24 hours, record "out of neighborhood all 24 hours." In other words, record "out of the neighborhood all 24 hours" when a person is away from the work/home area 18 to 24 hours. Mr. Hawkins, in the illustration, was on his trip about 18 hours (6 AM to midnight). If he had left later in the morning or had returned earlier in the evening, the interviewer would not have blackened the Friday circle for him.

Exposure Questions

Answers to two of the three questions at the bottom of the questionnaire will be used to estimate pollution exposure related to cooking fuel used in the home. The answers to the third question will be used to estimate a more exact exposure for the respondents alone, many of whom spend the major portion of their time inside the home. Note that the answer matrix in this portion of the form consists of the first column where the three questions are printed and seven columns identified at the column head for each day of the week. For answers the respondent gives to all three of these questions, you should record in one of the six possible answer ranges:

"0" circle = no time at all.
"1" circle = more than zero up to and including 1 hour.
"2" circle = more than 1 hour up to and including 2 hours.
"3" circle = more than 2 hours up to and including 3 hours.
"4" circle = more than 3 hours up to and including 4 hours.
"5" circle = more than 4 hours.
"9" circle = the respondent is unable to estimate the time.

The answers recorded in the sample questionnaire on Page A27 for the Hawkins family interview illustrate these definitions. A computer entry will be made on the lines in the third question to designate the period of time you are to ask the respondent about the number of hours she spent out-of-doors. Record only the hours spent out-of-doors within that block of time. For your information only, the block of time printed here will be based on pollution levels that must be considered in the exposure analysis.

Identifying Information

On the right side of the questionnaire, directly below the form title, four lines are provided for identifying information which will be printed by computer for you. The surname of the family will be printed on the first line and the family's ID number on the second line. On the third, ("Period") the number of the study week will be printed and on the fourth line ("Start Date") the date of the first day of the study week.

Coding

Below these four identifying information lines, five coding blocks are provided. You need code in only three of these blocks: "Interviewer," "Date Called," and "Respondent Code." In the first, blacken the two circles corresponding to your own code number. In the second coding block, code two digits each for the month and day the call was completed, using the following month digits:

01 = January
02 = February
03 = March
04 = April
05 = May
06 = June
07 = July
08 = August
09 = September
10 = October
11 = November
12 = December.

The digits for day called will correspond to the day of the month; days 1 through 9 should be coded "0" plus the date. In the third coding block, "Respondent Code," blacken the circles corresponding to the two-digit number of the family member who reported the data you have recorded on the questionnaire. The interviewer's coding required in these three blocks is illustrated on Page A27: interviewer 32 completed the interview on October 10 and family member 02 was the respondent.

The fourth coding block on the right side of the questionnaire is for the family's ID number which will be pre-coded by computer. The fifth block, also computer pre-coded, is used for checking other coding and for optical scan reading of the study period identification.

Directly below the fifth coding block are two circles, the first of which you will blacken to notify data processing that a family is to be withdrawn from the study. The circle you will use for this purpose is identified by the letter "E" printed in its center. This circle will be blackened for any family withdrawn regardless of the reason for withdrawal.

Manually Generated Questionnaires

Occasionally a computer-printed questionnaire may become damaged so that it cannot be used. In such cases, you must copy the following computer-printed items from the damaged form to a blank questionnaire:

1. Write at the heads of the family member columns the numbers and names as they are printed and in the order they are printed on the damaged form.
2. Write the identifying information (Name of Head of Household, ID, Period, Start Date) on the lines at the upper right side of the form as these items are printed on the damaged questionnaire.
3. Blacken the circles for the six-digit family ID number in the coding block, "Family ID."
4. Blacken the circles for the two digits printed on the "Period" line in the coding block, "PD."
5. Blacken the appropriate circle in the single-column coding block, "Page", to identify page 1, 2, or 3 of the questionnaire. Usually only one page will be required for a family.

Whenever two or more pages are required, repeat on all pages the coding you have entered in any of the other coding blocks and in the "E" and "M" circles. This applies to computer generated as well as manually generated forms.

6. Whenever you generate a form manually, blacken the "M" circle at the lower right side of the questionnaire, immediately to the right of the "E" circle. A blackened "M" circle signals that the form has been manually generated, thus eliminating a machine quality check that is performed on computer generated forms.

Notifying Changes

At the heads of the family member columns several coding circles have been provided to signal computer changes needed during the course of the study. Blacken the appropriate circle on the questionnaire on which you are recording the week you learn of the change. It is not necessary, however, for you to ask every week if any changes have occurred; systematic interviewing for possible changes in all families will be scheduled for selected study weeks at intervals during the study period. Some changes may be missed, however, unless they are recorded the week the respondent reports them. Therefore, blacken the appropriate circle as necessary, using the following guide:

"A" circle =	The family has moved to another address within the monitoring zone. This circle is provided only in the first family member column.
"J" circle =	A family member has changed jobs. This circle appears at the head of all columns but will be used only for the parents.
"S" circle =	A family member has changed his/her smoking habit. This circle is provided at the heads of all columns and may be used for any family member.
"F" circle =	A new family member has been added or a member has left the family. This circle is provided at the head of all columns.

Whenever one of these four changes is reported to you, in addition to blackening the appropriate circle, prepare a "Notification of ARD Study Change" to transmit the specific information for the change. This notification form is a modified version of the "Pre-surveillance Telephone Call Worksheet." A copy of it is shown on Pages A32-A35. Instructions for its use are the same as those for using the "Pre-surveillance Telephone Call Worksheet" except for those items that have been modified. The modified items are:

Item 5.	Surveillance Week No.: Enter on the line provided the two digits of the number of the study week you learn of the change.
Item 6.	Start Date: Enter on the line provided the date of the first day of the study week you learn of the change.
Item 7.	Family Member Number: Enter on the line provided the two digits of the number(s) of the family member(s) for whom you are reporting the change(s).
Item 8.	Family Member Name: Enter on the line provided the name(s) of the family member(s) for whom you are reporting the change(s).
Item 9.	Date Change Occurred: Enter the six digits (or their closest approximation) of the date(s) of the changes.

INTERVIEWER RECORD CARD

Symptom Questionnaires, when completed, will be sent for data processing each week and will not then be available for you to refer to. Therefore, you must make notes of your interview to be able to conduct a knowledgeable interview the following week. That is the primary purpose of the "Interviewer Record Card." On the front of this record card there is a place for noting the respondent's phone number and calling time, both of which may change during the study period. The record card, thus, provides instant access to these two essential items needed to conduct the interview. The record card also serves the purpose of making it possible for you and other study staff to evaluate periodically each family for consistency in call day, respondent, and interviewer, as well as to identify chronic non-responding families that should be withdrawn from the study.

Because interviewers will be rotated to call different groups of families for six-week periods and there will be times when an assigned interviewer is unable to make her calls, these record cards must be kept in a consistent manner. A substitute interviewer or another staff member must be able to understand card notations without difficulty. In other words, all interviewers must make notations on the record cards in the same way to achieve the desired consistency.

The "Interviewer Record Card" is a set of eight 5x8 inch cards bound together by a plastic comb for easy use and to avoid card misplacement. Spaces are provided on the first side of the first card for entering identifying information. When this first card is flipped up, spaces to make notations for eight study weeks are visible on the reverse side of the first card and the front of the second card. The same is true as remaining cards are flipped, to a final total of 52 weeks' notation spaces. A sample of the reverse side of the first card and the front of the second card of a record card deck is shown on Page A30 on which entries have been made to illustrate its use. Instructions for making notations on the cards are given on Page A31. Note that illustrated on Page A30 are notations for the Hawkins family interview on Pages 16-19. That interview was for study week 04, the notations for which are shown in the appropriate space in the card record illustration, as well as notations for previous study weeks.

WITHDRAWAL OF STUDY FAMILIES

In any study of the size and duration of the ARD Study, it is inevitable that some families will not continue to participate for the entire period of data collection. You can play an important role in keeping withdrawals to a minimum. Your personal interest and enthusiasm will spontaneously transmit to your respondents; your skill in deliberately using techniques to encourage and stimulate respondents will be equally effective.

The most frequent reason for withdrawal is usually the request of the respondent, in many cases because of a family situation unrelated to the study or study staff. The largest number of such requests will be made at the pre-surveillance call and at the time of the first surveillance call for which replacements will be made. No replacement will be made of families that are withdrawn for any reason after the first surveillance call.

As the study progresses, withdrawals will be made for other reasons, the most frequent of which will be non-response. It is essential to have health data from each family for a sufficient number of weeks to perform an adequate analysis; absence of data for continuous blocks of time or intermittently missing over a period of time invalidates data that has been collected for that family. Each family's record will be reviewed periodically for adequacy of response frequency.

Three other factors that impact on data analysis results and that may be reason for withdrawal are frequency of respondent substitutions, unavailability of the respondent for interview during the Monday-Tuesday calling period, and frequency of interviewer substitutions. These factors will be evaluated throughout the study period. There will be, of course, times of illness or family crises when substitutions cannot be avoided. Withdrawals for respondent substitutions can be held to an minimum by callback when respondents are not immediately available for interviewing. A time for calling, established at the pre-surveillance call, that proves to be inconvenient for the respondent will become apparent during the early study weeks. Withdrawal for respondent unavailability during the two-day period may be avoided by recognizing the difficulty and arranging to reverse the call day or establish a more convenient hour of the day.

QUALITY ASSURANCE

Researchers strive constantly to achieve the highest quality possible in their data. In processing data numerous techniques have been developed for this purpose. The first step toward quality in the collection phase of any study is a well-qualified interviewing staff, constantly aware of the need for accuracy and consistency in the data they are responsible for collecting. In the ARD Study one measure taken to assure quality is the regular, consistent reassignment of families to interviewers. This measure reduces the introduction of unknown factors that could affect the data, such as personal biases of which no one is aware. Another quality assurance measure is the re-interviewing of respondents soon after the original interview is completed. Random samples of completed ARD Study interviews will be selected at pre-determined times during the course of the study. The sampled families will be re-interviewed by a non-interviewer staff member. The specific families selected and the weeks scheduled for re-interviewing will be unknown to assigned interviewers. Any need identified in the re-interview to correct misunderstanding of the data to be collected or performance not meeting the expected level will be discussed with the assigned interviewer. In addition to the foregoing measures, all completed Symptom Questionnaires will be carefully field-edited each week. Those with obvious omissions or coding errors will be returned to the assigned interviewer for correction. This field editing can be done at a time when corrections can be made; that purpose cannot be met later when a similar machine editing will be performed. The machine editing will identify data errors and omissions for the purpose of determining useability of the data for analysis and testing the study hypotheses. The greater value of the field editing, which prevents loss of data, is obvious.

CONCLUSION

These instructions will, hopefully, give you answers for most of the questions you will have as you begin the interesting but difficult task of health data collection. Refer to them frequently as a refresher during the 52 weeks of the study. A briefing session to be held before interviewing begins will provide you an opportunity to raise questions or to seek further clarification of the methods described in this booklet.

APPENDIX

ARD
STUDY
CALENDAR
1978

Health Effects Research Laboratory
U.S. Environmental Protection Agency
Research Triangle Park, North Carolina 27711

WHAT YOU SHOULD KNOW ABOUT THIS CALENDAR AND THE ARD STUDY

PLEASE MAKE NOTATIONS ON YOUR CALENDAR EACH DAY. It will be hard to remember the exact days you or another member of your family had a head cold or other symptoms and other information important for the ARD Study if you wait a day or two to make notations. The exact day is very important because we are taking measurements in your community 24 hours every day that will help us to find out what environmental factors affect you and other persons suffering from acute respiratory disease. So, if you report your symptoms for the exact day they occur, we will examine the right measurements for you.

Our interviewer will call you each week and ask you questions about the previous week. She will ask you for yourself and each member of your family. The following symptoms are numbered to assist you in keeping your calendar:

0-No Symptoms
1-Eye Irritation
2-Headache
3-Runny Nose
4-Sinusitis or Sinus Problem
5-Aching Muscles
6-Chest Discomfort or Chest Pain
7-Dry Scratchy Throat

8-Sore Throat
9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity

16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia
27-Out of Neighborhood for all 24 hours.

Questions for mothers or respondents only:
a. Number of hours oven used
b. Number of hours stove top burners used
c. Number of hours spent outside between 12 noon and 6:00 p.m.

a, b, and c have been printed on each calendar day to help in keeping record of questions a, b, and c for Mothers or respondents. For question c, continue to use 12 noon to 6:00 p.m. when you go from daylight-saving time to standard time.

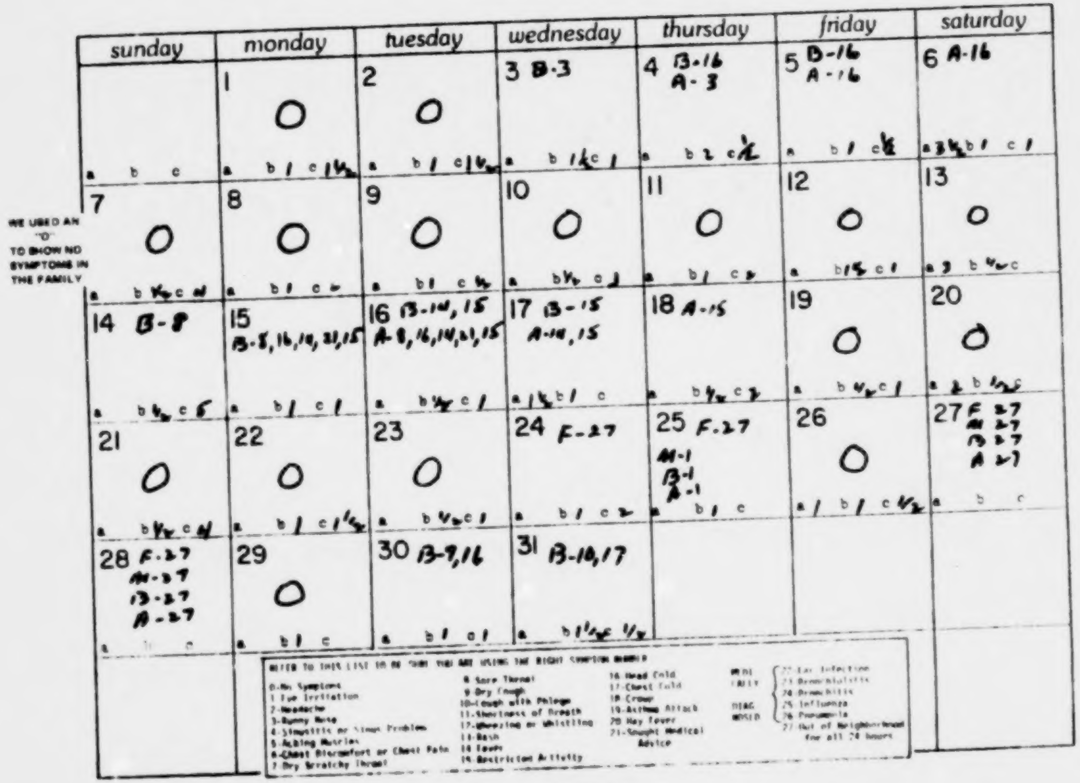
On the back of this page there is a sample calendar month for a hypothetical family. It may help you decide how you want to keep your calendar. Use it the way that is easiest for you. Just be sure to note enough information each day so that you can answer the questions the telephone interviewer will ask you. Please keep date of initial symptoms and duration for each family member. The spread of symptoms or irritation symptoms through the family is important. In the example we used "F" for father, "M" for mother, "B" for Bill, and "A" for Ann. We used "0" on the first two days of the month to show no symptoms in the family. On Wednesday Bill had a runny nose, "B-3", on Thursday Bill had a head cold and Ann had a runny nose, "B-16", "A-3", on Friday both Bill and Ann had head colds, "B-16", "A-16", etc.

Note on the first 5 days of the month the mother did not use the oven so she made no entry for a; on the 6th day she used the oven 3 1/2 hours and coded a"3 1/2"; on day 1 and 2 she used the stove top burners about 1 hour each day and coded b"1"; on day 1 and day 2 the mother spent about 1 1/2 hours outside each day and coded c"1 1/2", etc.

On the next page your calendar begins. The block for the first day you should start to make your notations is marked.

WITH YOUR HELP, MEASURES CAN BE TAKEN TO IMPROVE OUR ENVIRONMENT.

WE THANK YOU FOR AGREEING TO HELP



WE USED AN "O" TO SHOW NO SYMPTOMS IN THE FAMILY

sunday	monday	tuesday	wednesday	thursday	friday	saturday
a b c	1 O a b 1 c 1½	2 O a b 1 c 1½	3 B-3 a b 1½ c 1	4 B-16 A-3 a b 2 c ½	5 B-16 A-16 a b 1 c ½	6 A-16 a 3½ b 1 c 1
7 O a b ½ c 4	8 O a b 1 c 2	9 O a b 1 c ½	10 O a b ½ c 2	11 O a b 1 c 2	12 O a b 1½ c 1	13 O a 3 b ½ c
14 B-8 a b ½ c 6	15 B-8,16,19,21,15 a b 1 c 1	16 B-14,15 A-8,16,14,21,15 a b ½ c 1	17 B-15 A-14,15 a 1½ b 1 c	18 A-15 a b ½ c 3	19 O a b ½ c 1	20 O a 2 b ½ c
21 O a b ½ c 4	22 O a b 1 c 1½	23 O a b ½ c 1	24 F-27 a b 1 c 2	25 F-27 M-1 B-1 A-1 a b 1 c	26 O a 1 b 1 c ½	27 F-27 M-27 B-27 A-27 a b c
28 F-27 M-27 B-27 A-27 a b c	29 O a b 1 c	30 B-9,16 a b 1 c 1	31 B-10,17 a b 1½ c ½			

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

0-No Symptoms
1 Eye Irritation
2-Headache
3-Runny Nose
4-Sinusitis or Sinus Problem
5-Aching Muscles
6-Chest Discomfort or Chest Pain
7 Dry Scratchy Throat
8 Sore Throat
9 Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14 Fever
15-Restricted Activity
16 Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20 Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED
22-Ear Infection
23 Bronchiolitis
24 Bronchitis
25 Influenza
26 Pneumonia

27 Out of Neighborhood for all 24 hours

SAMPLE

SEPTEMBER 1978

sunday	monday	tuesday	wednesday	thursday	friday	saturday
					1 a b c	2 a b c
3 a b c	4 a b c	5 a b c	6 a b c	7 a b c	8 a b c	9 a b c
10 a b c	11 a b c	12 a b c	13 a b c	14 a b c	15 a b c	16 a b c
17 a b c	18 a b c	19 a b c	20 a b c	21 a b c	22 a b c	23 a b c
24 a b c	25 a b c	26 a b c	27 a b c	28 a b c	29 a b c	30 a b c

BEGIN RECORDING YOUR SYMPTOMS →

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

0-No Symptoms
1-Eye Irritation
2-Headache
3-Runny Nose
4-Sinusitis or Sinus Problem
5-Aching Muscles
6-Chest Discomfort or Chest Pain
7-Dry Scratchy Throat
8-Sore Throat
9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED:
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia

27-Out of Neighborhood for all 24 hours.

OCTOBER 1978

sunday	*monday*	*tuesday*	*wednesday*	*thursday*	*friday*	*saturday*
1 a b c	2 a b c	3 a b c	4 a b c	5 a b c	6 a b c	7 a b c
8 a b c	9 a b c	10 a b c	11 a b c	12 a b c	13 a b c	14 a b c
15 a b c	16 a b c	17 a b c	18 a b c	19 a b c	20 a b c	21 a b c
22 a b c	23 a b c	24 a b c	25 a b c	26 a b c	27 a b c	28 a b c
29 a b c	30 a b c	31 a b c	a b c	a b c	a b c	a b c

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

0-No Symptoms
1-Eye Irritation
2-Headache
3-Runny Nose
4-Sinusitis or Sinus Problem
5-Aching Muscles
6-Chest Discomfort or Chest Pain
7-Dry Scratchy Throat
8-Sore Throat
9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED:
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia

27-Out of Neighborhood for all 24 hours.

NOVEMBER 1978

sunday	*monday*	*tuesday*	*wednesday*	*thursday*	*friday*	*saturday*
			1 a b c	2 a b c	3 a b c	4 a b c
5 a b c	6 a b c	7 a b c	8 a b c	9 a b c	10 a b c	11 a b c
12 a b c	13 a b c	14 a b c	15 a b c	16 a b c	17 a b c	18 a b c
19 a b c	20 a b c	21 a b c	22 a b c	23 a b c	24 a b c	25 a b c
26 a b c	27 a b c	28 a b c	29 a b c	30 a b c		

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

0-No Symptoms
1-Eye Irritation
2-Headache
3-Runny Nose
4-Sinusitis or Sinus Problem
5-Aching Muscles
6-Chest Discomfort or Chest Pain
7-Dry Scratchy Throat
8-Sore Throat
9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED
- 22-Ear Infection
- 23-Bronchiolitis
- 24-Bronchitis
- 25-Influenza
- 26-Pneumonia

27-Out of Neighborhood for all 24 hours.

DECEMBER 1978

sunday	*monday*	*tuesday*	*wednesday*	*thursday*	*friday*	*saturday*
					1 a b c	2 a b c
3 a b c	4 a b c	5 a b c	6 a b c	7 a b c	8 a b c	9 a b c
10 a b c	11 a b c	12 a b c	13 a b c	14 a b c	15 a b c	16 a b c
17 a b c	18 a b c	19 a b c	20 a b c	21 a b c	22 a b c	23 a b c
24 a b c	25 a b c	26 a b c	27 a b c	28 a b c	29 a b c	30 a b c
31 a b c						

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

0-No Symptoms
1-Eye Irritation
2-Headache
3-Runny Nose
4-Sinusitis or Sinus Problem
5-Aching Muscles
6-Chest Discomfort or Chest Pain
7-Dry Scratchy Throat
8-Sore Throat
9 Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED:
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia

27-Out of Neighborhood for all 24 hours.

JANUARY 1979

sunday	*monday*	*tuesday*	*wednesday*	*thursday*	*friday*	*saturday*
	1 a b c	2 a b c	3 a b c	4 a b c	5 a b c	6 a b c
7 a b c	8 a b c	9 a b c	10 a b c	11 a b c	12 a b c	13 a b c
14 a b c	15 a b c	16 a b c	17 a b c	18 a b c	19 a b c	20 a b c
21 a b c	22 a b c	23 a b c	24 a b c	25 a b c	26 a b c	27 a b c
28 a b c	29 a b c	30 a b c	31 a b c			

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

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9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED:
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia

27-Out of Neighborhood for all 24 hours.

FEBRUARY 1979

sunday	*monday*	*tuesday*	*wednesday*	*thursday*	*friday*	*saturday*
				1 a b c	2 a b c	3 a b c
4 a b c	5 a b c	6 a b c	7 a b c	8 a b c	9 a b c	10 a b c
11 a b c	12 a b c	13 a b c	14 a b c	15 a b c	16 a b c	17 a b c
18 a b c	19 a b c	20 a b c	21 a b c	22 a b c	23 a b c	24 a b c
25 a b c	26 a b c	27 a b c	28 a b c			

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

0-No Symptoms
1-Eye Irritation
2-Headache
3-Runny Nose
4-Sinusitis or Sinus Problem
5-Aching Muscles
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8-Sore Throat
9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia

27-Out of Neighborhood for all 24 hours.

MARCH 1979

sunday	monday	tuesday	wednesday	thursday	friday	saturday
				1 a b c	2 a b c	3 a b c
4 a b c	5 a b c	6 a b c	7 a b c	8 a b c	9 a b c	10 a b c
11 a b c	12 a b c	13 a b c	14 a b c	15 a b c	16 a b c	17 a b c
18 a b c	19 a b c	20 a b c	21 a b c	22 a b c	23 a b c	24 a b c
25 a b c	26 a b c	27 a b c	28 a b c	29 a b c	30 a b c	31 a b c

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

0-No Symptoms
1-Eye Irritation
2-Headache
3-Runny Nose
4-Sinusitis or Sinus Problem
5-Aching Muscles
6-Chest Discomfort or Chest Pain
7-Dry Scratchy Throat
8-Sore Throat
9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
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13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED:
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia

27-Out of Neighborhood for all 24 hours.

APRIL 1979

sunday	*monday*	*tuesday*	*wednesday*	*thursday*	*friday*	*saturday*
1 a b c	2 a b c	3 a b c	4 a b c	5 a b c	6 a b c	7 a b c
8 a b c	9 a b c	10 a b c	11 a b c	12 a b c	13 a b c	14 a b c
15 a b c	16 a b c	17 a b c	18 a b c	19 a b c	20 a b c	21 a b c
22 a b c	23 a b c	24 a b c	25 a b c	26 a b c	27 a b c	28 a b c
29 a b c	30 a b c					

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

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11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED:
22-Ear Infection
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24-Bronchitis
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MAY 1979

sunday	*monday*	*tuesday*	*wednesday*	*thursday*	*friday*	*saturday*
		1 a b c	2 a b c	3 a b c	4 a b c	5 a b c
6 a b c	7 a b c	8 a b c	9 a b c	10 a b c	11 a b c	12 a b c
13 a b c	14 a b c	15 a b c	16 a b c	17 a b c	18 a b c	19 a b c
20 a b c	21 a b c	22 a b c	23 a b c	24 a b c	25 a b c	26 a b c
27 a b c	28 a b c	29 a b c	30 a b c	31 a b c		

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

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8-Sore Throat
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10-Cough with Phlegm
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16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
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MEDICALLY DIAGNOSED:
22-Ear Infection
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24-Bronchitis
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27-Out of Neighborhood for all 24 hours.

JUNE 1979

sunday	monday	tuesday	wednesday	thursday	friday	saturday
					1 a b c	2 a b c
3 a b c	4 a b c	5 a b c	6 a b c	7 a b c	8 a b c	9 a b c
10 a b c	11 a b c	12 a b c	13 a b c	14 a b c	15 a b c	16 a b c
17 a b c	18 a b c	19 a b c	20 a b c	21 a b c	22 a b c	23 a b c
24 a b c	25 a b c	26 a b c	27 a b c	28 a b c	29 a b c	30 a b c

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

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17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED:
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JULY 1979

sunday	*monday*	*tuesday*	*wednesday*	*thursday*	*friday*	*saturday*
1 a b c	2 a b c	3 a b c	4 a b c	5 a b c	6 a b c	7 a b c
8 a b c	9 a b c	10 a b c	11 a b c	12 a b c	13 a b c	14 a b c
15 a b c	16 a b c	17 a b c	18 a b c	19 a b c	20 a b c	21 a b c
22 a b c	23 a b c	24 a b c	25 a b c	26 a b c	27 a b c	28 a b c
29 a b c	30 a b c	31 a b c				

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

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8-Sore Throat
9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-~~Restricted Activity~~
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED:
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
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AUGUST 1979

sunday	monday	tuesday	wednesday	thursday	friday	saturday
			1 a b c	2 a b c	3 a b c	4 a b c
5 a b c	6 a b c	7 a b c	8 a b c	9 a b c	10 a b c	11 a b c
12 a b c	13 a b c	14 a b c	15 a b c	16 a b c	17 a b c	18 a b c
19 a b c	20 a b c	21 a b c	22 a b c	23 a b c	24 a b c	25 a b c
26 a b c	27 a b c	28 a b c	29 a b c	30 a b c	31 a b c	

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

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3-Runny Nose
4-Sinusitis or Sinus Problem
5-Aching Muscles
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8-Sore Throat
9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
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16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED:
22-Ear Infection
23-Bronchiolitis
24-Bronchitis
25-Influenza
26-Pneumonia
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SEPTEMBER 1979

sunday	monday	tuesday	wednesday	thursday	friday	saturday
						1 a b c
2 a b c	3 a b c	4 a b c	5 a b c	6 a b c	7 a b c	8 a b c
9 a b c	10 a b c	11 a b c	12 a b c	13 a b c	14 a b c	15 a b c
16 a b c	17 a b c	18 a b c	19 a b c	20 a b c	21 a b c	22 a b c
23 a b c	24 a b c	25 a b c	26 a b c	27 a b c	28 a b c	29 a b c
30 a b c						

REFER TO THIS LIST TO BE SURE YOU ARE USING THE RIGHT SYMPTOM NUMBER

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3-Runny Nose
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8-Sore Throat
9-Dry Cough
10-Cough with Phlegm
11-Shortness of Breath
12-Wheezing or Whistling
13-Rash
14-Fever
15-Restricted Activity
16-Head Cold
17-Chest Cold
18-Croup
19-Asthma Attack
20-Hay Fever
21-Sought Medical Advice

MEDICALLY DIAGNOSED
- 22-Ear Infection
- 23-Bronchiolitis
- 24-Bronchitis
- 25-Influenza
- 26-Pneumonia

27-Out of Neighborhood for all 24 hours.

PRE-SURVEILLANCE
TELEPHONE CALL
WORK SHEET

HEALTH EFFECTS RESEARCH LABORATORY
U.S. ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NORTH CAROLINA 27711

PRE-SURVEILLANCE TELEPHONE CALL WORKSHEET

1. Family Surname: LEE
2. Respondent: CONNIE MOORE
3. ID No.: 078941
4. Interviewer: 16

5. Date and Time of Contact Attempts:
9/11 - 10 am
9/12 - 4 pm
9/13 - 6 pm

6. Unable to Contact Family:
☐ Phone Disconnected
☐ No Phone
☐ No Answer to Phone Call
☐ Other

7. Respondent Still Agrees to Participate: ☑ Yes ☐ No ______ (Reason)

8. Surveillance Calendar Received: ☐ Yes ☑ No 9/13/78 (Date Duplicate Mailed)

9. Time to Make Weekly Surveillance Calls:
Comments: Works 8-5 Mon-Fri
ATTENDS CLASS 5-6 pm Tu-

Mon. ______ a.m. Tues. ______ a.m.
(1) Mon. 6³⁰ p.m. (2) Tues. 8 p.m.

UPDATING THE BACKGROUND QUESTIONNAIRE

10. Front Page:
☑ Head of Household Name: MOORE
☐ Address:
☐ Phone Number:
☐ Front Page Does Not Need Updating.

11. Section I:
Q.1.
Q.4. FATHER - CITY OF OVER 200,000 people
Q.5. FATHER - CHICAGO, ILL.
Q.6. FATHER - HIGH SCHOOL GRADUATE
Q.7. OTHER, include MIXED
☐ Section I Does Not Need Updating.

12. Section II Questions 1 Through 9:
Q.1.
Q.2.
Q.3.
Q.4. ELECTRIC WATER HEATER
Q.5.
Q.6.
Q.7. YES, CENTRAL
Q.8.
Q.9.
☐ Section II Questions 1 Through 9 Do Not Need Updating.

13. Section II Questions 10 Through 11b.

☐ Section II Questions 10 Through 11b Do Not Need Updating.

	MOTHER (OR FEMALE GUARDIAN)	FATHER (OR MALE GUARDIAN)
10 ARE YOU EMPLOYED AT A JOB OTHER THAN A JOB YOU WORK AT WITHIN YOUR OWN HOME? IF YOU ANSWERED "YES" TO QUESTION 10, PLEASE ANSWER QUESTIONS 10a THROUGH 10h	○ NO ● YES	○ NO ● YES
10 a AT YOUR JOB DO YOU WORK	INDOORS ○ SHOP ● OFFICE ○ FACTORY ○ OTHER OUTDOORS ○ STATIONARY ○ MOBILE ○ OTHER	INDOORS ○ SHOP ○ OFFICE ● FACTORY ○ OTHER OUTDOORS ○ STATIONARY ○ MOBILE ○ OTHER
10 b HOW DO YOU USUALLY GET TO WORK?	○ AUTOMOBILE ○ BUS ○ OTHER PUBLIC TRANSPORT ● WALK ○ OTHER ________ (SPECIFY)	● AUTOMOBILE ○ BUS ○ OTHER PUBLIC TRANSPORT ○ WALK ○ OTHER ________ (SPECIFY)
10 c HOW LONG DOES IT TAKE YOU TO GET TO WORK?	○ LESS THAN ¼ HOUR ● ¼ TO ½ HOUR ○ ½ TO 1 HOUR ○ MORE THAN 1 HOUR	○ LESS THAN ¼ HOUR ○ ¼ TO ½ HOUR ● ½ TO 1 HOUR ○ MORE THAN 1 HOUR
10 d DO YOU TRAVEL PREDOMINATELY (50% OR MORE TRIP TIME) ON ROADS WITH 6 OR MORE LANES?	● NO ○ YES	○ NO ● YES
10 e WHAT DAYS OF THE WEEK DO YOU USUALLY WORK?	● MONDAY THRU FRIDAY ○ MONDAY THRU SATURDAY ○ OTHER ________ (SPECIFY)	○ MONDAY THRU FRIDAY ● MONDAY THRU SATURDAY ○ OTHER ________ (SPECIFY)
10 f HOW MANY HOURS A DAY DO YOU USUALLY WORK?	○ LESS THAN 4 HOURS ● 4 TO 6 HOURS ○ 6 TO 8 HOURS ○ MORE THAN 8 HOURS	○ LESS THAN 4 HOURS ○ 4 TO 6 HOURS ○ 6 TO 8 HOURS ● MORE THAN 8 HOURS
10 g WHAT TIME OF DAY DO YOU USUALLY START WORK?	● 7 AM TO 10 AM ○ 10 AM TO 1 PM ○ 1 PM TO 4 PM ○ 4 PM TO 7 PM ○ 7 PM TO 7 AM	● 7 AM TO 10 AM ○ 10 AM TO 1 PM ○ 1 PM TO 4 PM ○ 4 PM TO 7 PM ○ 7 PM TO 7 AM
10 h WHAT IS THE ADDRESS OF YOUR PLACE OF WORK?	1016 Horn St. OFFICE USE ONLY	2030 FIFTH St. OFFICE USE ONLY
11 AT ANY JOB PAST OR PRESENT ARE YOU NOW OR HAVE YOU BEEN FREQUENTLY EXPOSED TO IRRITATING SMOKE, DUST, OR FUMES? IF YOU ANSWERED "YES" TO QUESTION 11, PLEASE ANSWER QUESTIONS 11a AND 11b	● NO ○ YES	○ NO ● YES
11 a HOW LONG WERE YOU EXPOSED?	○ LESS THAN 1 YEAR ○ 1 TO 5 YEARS ○ 6 TO 10 YEARS ○ MORE THAN 10 YEARS	○ LESS THAN 1 YEAR ○ 1 TO 5 YEARS ○ 6 TO 10 YEARS ● MORE THAN 10 YEARS
11 b WHAT KIND OF IRRITANT WERE YOU EXPOSED TO? FOR EXAMPLE, ASBESTOS, COAL DUST, SMELTER FUMES, RAW COTTON DUST, FOUNDRY DUST	________ OFFICE USE ONLY	FOUNDRY DUST OFFICE USE ONLY

14. Section III:

☐ Section III Does Not Need Updating.

1 WRITE IN THE COLUMN BELOW THE FIRST AND MIDDLE NAME OF EACH PERSON LIVING IN THE HOUSEHOLD. WRITE LAST NAME FOR THE PERSONS WHOSE LAST NAME IS DIFFERENT FROM THAT ON THE COVER OF THE QUESTIONNAIRE.	2 MONTH AND YEAR OF BIRTH		3 SEX		4 POSITION IN HOUSEHOLD				5 WHICH OF THE FOLLOWING CHRONIC DISEASES HAVE BEEN DIAGNOSED FOR THIS PERSON?					6 DOES THIS PERSON SMOKE A PIPE OR CIGAR ON MOST DAYS?		7 HAS THIS PERSON SMOKED A TOTAL OF MORE THAN 100 CIGARETTES DURING HIS OR HER ENTIRE LIFE?			8 DOES THIS PERSON SMOKE CIGARETTES NOW?			9 IF THIS PERSON IS A CURRENT OR AN EX CIGARETTE SMOKER, HOW MANY CIGARETTES DOES (DID) HE/SHE SMOKE PER DAY?				10 IF THIS PERSON IS A CURRENT OR AN EX CIGARETTE SMOKER HOW OLD WAS HE/SHE WHEN HE/SHE FIRST STARTED SMOKING REGULARLY?	11 IF THIS PERSON IS AN EX CIGARETTE SMOKER, HOW OLD WAS HE/SHE WHEN HE/SHE LAST GAVE UP SMOKING REGULARLY?
NAME	MONTH	YEAR	MALE	FEMALE	FATHER	MOTHER	CHILD	OTHER	NONE	CHRONIC HEART DISEASE	INACTIVE ASTHMA	ACTIVE ASTHMA	CHRONIC LUNG DISEASE OTHER THAN ASTHMA	NO	YES	NO	YES	DON'T KNOW	NO	YES	DON'T KNOW	10 OR LESS	ABOUT 20	ABOUT 30	40 OR MORE	AGE IN YEARS	AGE IN YEARS
01 CONNIE MOORE			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	○	○	○	○	○	○		28
02			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
03 ~~ADAM LEE~~			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
04 JOHN MOORE	12	1948	●	○	●	○	○	○	●	○	○	○	○	●	○	●	○	○	●	○	○	○	○	○	○		
05 MARY MOORE	07	1978	○	●	○	○	●	○	●	○	○	○	○	●	○	●	○	○	●	○	○	○	○	○	○		
06			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
07			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
08			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
09			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
10			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
11			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
12			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
13			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
14			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
15			○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		

INSTRUCTIONS FOR USING
THE PRE-SURVEILLANCE TELEPHONE CALL WORKSHEET

Item 1. Family Surname: Copy the surname of the head of the household that the recruitment interviewer recorded on the Front Page of the Background Questionnaire.

Item 2. Respondent: Enter on this line the name of the family member with whom you conduct the pre-surveillance telephone call.

Item 3. ID No.: Copy the six-digit number printed in black ink immediately below the quesionnaire title on the Front Page of the Background Questionnaire.

Item 4. Interviewer: Write on this line your own interviewer code number.

Item 5. Date and time of contact attempts: Enter the date and time you successfully conduct the pre-surveillance interview, as well as the dates and times (if any) you are unsuccessful. Your entries should show that you made at least six attempts in accordance with the instructions on Page 9 of this booklet. The sample worksheet on Page A19 shows that the interviewer tried unsuccessfully to contact the family on September 11 at 10 AM and on September 12 at 4 PM. The last entry is the date and time (September 13 at 6 PM) that the interview was successfully completed.

Item 6. Unable to contact family: Check the first box when you learn by some means that the phone has been disconnected. Check the second box when you find that the phone number entered on the Front Page of the Background Questionnaire does not belong to the family and you are unable to obtain a number for the family from the telephone book or from the information operator. The box for "No answer to phone call" should be checked only when Item 5 shows that six attempts were made. The box for "Other" and the lines following it are for explaining why the contact was not made for a reason other than the three above. Leave Item 6 blank when you successfully contact the family.

Item 7. Respondent still agrees to participate: This item is self-explanatory.

Item 8. Surveillance calendar received: This item is self-explanatory. If the "No" box is checked, the pre-surveillance interviewer is responsible for seeing that a duplicate calendar is mailed immediately and, on the line provided, should note the date it is mailed.

Item 9. Time to make weekly surveillance calls: You may enter more than one time, but if you do so, identify the respondent's first preference, the second, etc., as illustrated on the sample worksheet. The "Comment" lines are provided for you to make notes about the respondent's activities that will help you later in judging the best time to call when you are unable to contact the respondent at the times she has designated.

Item 10. Updating Background Questionnaire, FRONT PAGE: Check the appropriate box and, on the line provided, enter the change that is to be made. The sample worksheet on Page A19 shows that there is no change in the address or phone number, but the head of the household name is changed to "Moore." If no change is needed, check the box for "Front Page does not need updating."

Item 11. Updating Background Questionnaire, SECTION I: This section of the questionnaire will require updating usually only when a family has moved or a new parent has become a member of the household. It may be necessary occasionally to change an answer in this section when the respondent informs you that an erroneous answer was given to the recruitment interviewer. Five lines are provided to record changes that may have occurred following the recruitment interview. Enter the changed answer on the line showing the appropriate question number. The answer to Question 1 will always have to be changed to "< 1 year" if the family has moved to a new address within the monitoring zone of the family's previous address. The answers to Questions 4 through 7 will always have to be changed when there is a new parent in the household. If no change is needed, check the box for "Section I does not need updating." How the changes are to be noted is illustrated in the sample worksheet in Page A19. In the illustration the mother remarried during the interval between the recruitment interview and the pre-surveillance interview.

Item 12. Updating Background Questionnaire, SECTION II, QUESTIONS 1-9: When answers are changed to Questions 1 through 9, enter each new answer on the line showing the appropriate question number. For example, the sample worksheet shows that the Question 4 answer should be changed to "electric" and the Question 7 answer should be changed to "Yes, central." If no change is needed, check the box for "Section II, Questions 1-9, does not need updating."

Item 13. Updating Background Questionnaire, SECTION II, QUESTIONS 10-11b: For this item, note that Pages 8 and 9 of the questionnaire have been Xeroxed and reduced in size to fit the worksheet page so that your recording burden will be reduced. Entries will be made in this item usually when one of the parents has changed jobs since the recruitment interview and always when a new parent has become a part of the household. There may also be a few occasions (when a mistake was made in reporting to the recruitment interviewer) to change an answer to only one of these questions. If no change is needed, check the box for "Section II, Questions 10-11b, does not need updating." The sample worksheet shows that the mother, who was not working at the time of the recruitment interview, is now employed, and answers are recorded for the new father in the household.

Item 14. Updating Background Questionnaire, SECTION III: Your burden for recording Section III changes has been reduced by duplicating and reducing, to worksheet page size, Pages 10 and 11 of the questionnaire.

There are several possible Section III changes that may be reported to the pre-surveillance interviewer. They are:

- A family member's name has been changed: Enter the new name in Column 1 and circle it to indicate it is a changed name.
- A new member has been added to the household. Enter the name in Column 1 on the first line left free in the Background Questionnaire and record answers in Columns 2 through 11.
- A family member has left the home: Enter that person's name in Column 1 on the same line it appeared in the Background Questionnaire and draw a line through Columns 2 through 11 to indicate the deletion.
- An answer(s) in Columns 5 through 11 is(are) changed for a family member: Enter that member's name in Column 1 on the same line it appeared in the Background Questionnaire and blacken only the circle(s) for the appropriate new answer(s) in Columns 5 through 11.

The sample worksheet on Page A22 illustrates these changes. In the illustration, the recruitment interviewer listed Mary Lee in the Background Questionnaire on line 01, Tom Lee on line 02, Alan Lee on line 03, and left line 04 blank (the first free line). The pre-surveillance interviewer learned that Mary Lee is now Mary Moore and she had stopped smoking, Alan Lee has left the home, John Moore is now living in the home, and Mary Moore, born after the recruitment interview, is now a family member. Since there is no change for Tom Lee, his name is not listed and no changes are shown for him.

If no changes are needed, check the box for "Section III does not need updating."

Note: A copy of your worksheet will be sent to Data Processing when items on the Background Questionnaire must be changed, so that the changes can be made on the computer tape. Therefore, print the new information very clearly so that keypunchers and coders are able to understand the change. Enter only new information as shown on the sample worksheet. Do not enter the original entry as it appeared in the Background Questionnaire and then show what the new entry should be.

ARD STUDY SURVEILLANCE SCHEDULE

Study Week No.	Surveillance Period	Telephone Interviewing
01	09/10/78 - 09/16/78	09/18 & 09/19/78
02	09/17/78 - 09/23/78	09/25 & 09/26/78
03	09/24/78 - 09/30/78	10/02 & 10/03/78
04	10/01/78 - 10/07/78	10/09 & 10/10/78
05	10/08/78 - 10/14/78	10/16 & 10/17/78
06	10/15/78 - 10/21/78	10/23 & 10/24/78
07	10/22/78 - 10/28/78	10/30 & 10/31/78
08	10/29/78 - 11/04/78	11/06 & 11/07/78
09	11/05/78 - 11/11/78	11/13 & 11/14/78
10	11/12/78 - 11/18/78	11/20 & 11/21/78
11	11/19/78 - 11/25/78	11/27 & 11/28/78
12	11/26/78 - 12/02/78	12/04 & 12/05/78
13	12/03/78 - 12/09/78	12/11 & 12/12/78
14	12/10/78 - 12/16/78	12/18 & 12/19/78
15	12/17/78 - 12/23/78	12/26 & 12/27/78*
16	12/24/78 - 12/30/78	01/02 & 01/03/79*
17	12/31/78 - 01/06/79	01/08 & 01/09/79
18	01/07/79 - 01/13/79	01/15 & 01/16/79
19	01/14/79 - 01/20/79	01/22 & 01/23/79
20	01/21/79 - 01/27/79	01/29 & 01/30/79
21	01/28/79 - 02/03/79	02/05 & 02/06/79
22	02/04/79 - 02/10/79	02/12 & 02/13/79
23	02/11/79 - 02/17/79	02/19 & 02/20/79
24	02/18/79 - 02/24/79	02/26 & 02/27/79
25	02/25/79 - 03/03/79	03/05 & 03/06/79
26	03/04/79 - 03/10/79	03/12 & 03/13/79
27	03/11/79 - 03/17/79	03/19 & 03/20/79
28	03/18/79 - 03/24/79	03/26 & 03/27/79

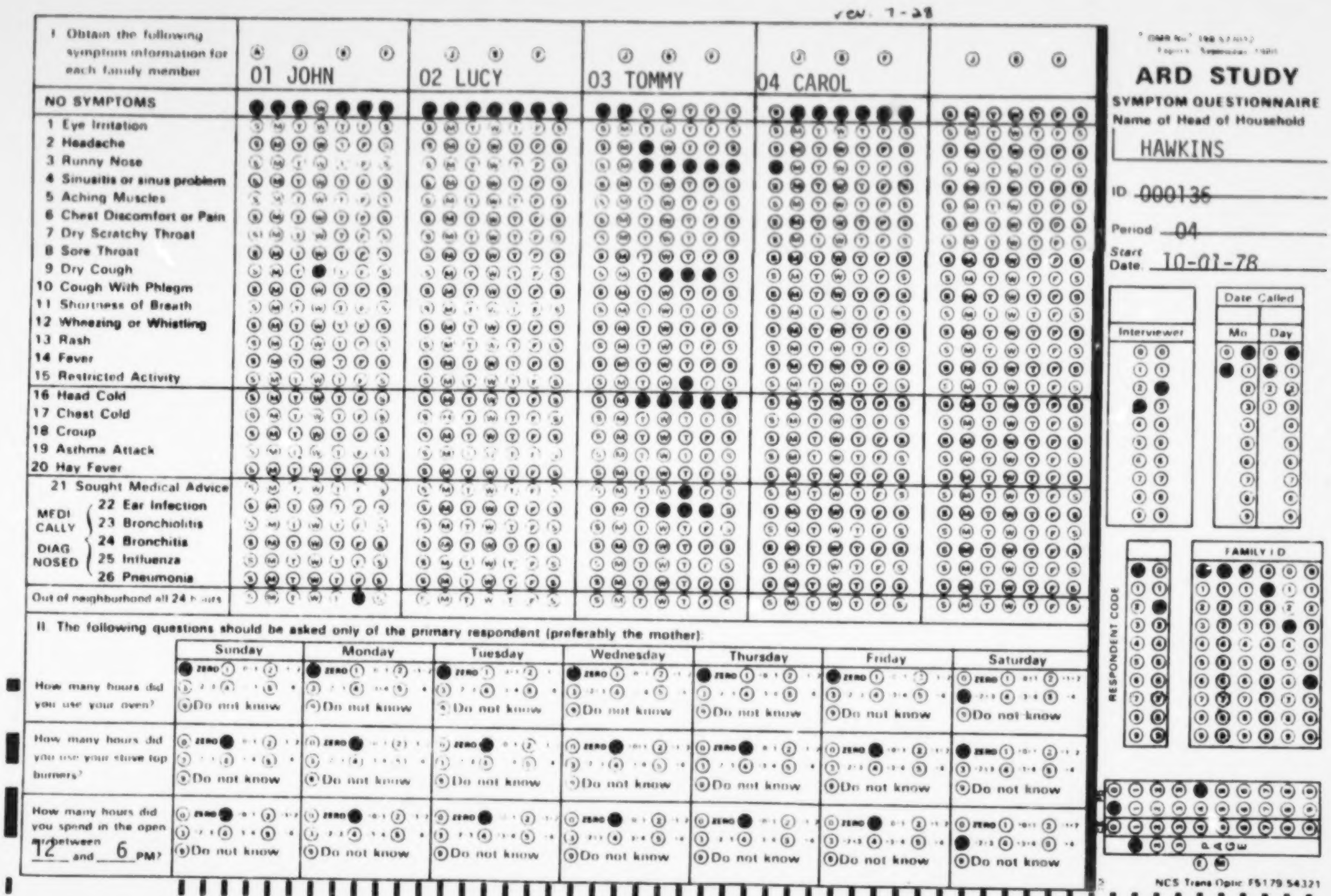
* Tuesday - Wednesday Telephone Calls

Continued

ARD SURVEILLANCE SCHEDULE

Study Week No.	Surveillance Period	Telephone Interviewing
29	03/25/79 - 03/31/79	04/02 & 04/03/79
30	04/01/79 - 04/07/79	04/09 & 04/10/79
31	04/08/79 - 04/14/79	04/16 & 04/17/79
32	04/15/79 - 04/21/79	04/23 & 04/24/79
33	04/22/79 - 04/28/79	04/30 & 05/01/79
34	04/29/79 - 05/05/79	05/07 & 05/08/79
35	05/06/79 - 05/12/79	05/14 & 05/15/79
36	05/13/79 - 05/19/79	05/21 & 05/22/79
37	05/20/79 - 05/26/79	05/29 & 05/30/79*
38	05/27/79 - 06/02/79	06/04 & 06/05/79
39	06/03/79 - 06/09/79	06/11 & 06/12/79
40	06/10/79 - 06/16/79	06/18 & 06/19/79
41	06/17/79 - 06/23/79	06/25 & 06/26/79
42	06/24/79 - 06/30/79	07/02 & 07/03/79
43	07/01/79 - 07/07/79	07/09 & 07/10/79
44	07/08/79 - 07/14/79	07/16 & 07/17/79
45	07/15/79 - 07/21/79	07/23 & 07/24/79
46	07/22/79 - 07/28/79	07/30 & 07/31/79
47	07/29/79 - 08/04/79	08/06 & 08/07/79
48	08/05/79 - 08/11/79	08/13 & 08/14/79
49	08/12/79 - 08/18/79	08/20 & 08/21/79
50	08/19/79 - 08/25/79	08/27 & 08/28/79
51	08/26/79 - 09/01/79	09/04 & 09/05/79*
52	09/02/79 - 09/08/79	09/10 & 09/11/79

* Tuesday - Wednesday Telephone Calls



OMB No. [illegible]
Expires [illegible]

ARD STUDY

SYMPTOM QUESTIONNAIRE

Name of Head of Household HAWKINS

ID 000136

Period 04

Start Date 10-01-78

rev. 7-28

I Obtain the following symptom information for each family member	01 JOHN	02 LUCY	03 TOMMY	04 CAROL	
	S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S	S M T W T F S
NO SYMPTOMS	●●●○●●●	●●●●●●●	●●○○○○○	○●●●●●●	○○○○○○○
1 Eye Irritation	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○
2 Headache	○○○○○○○	○○○○○○○	○○●○○○○	○○○○○○○	○○○○○○○
3 Runny Nose	○○○○○○○	○○○○○○○	○○●●●●●	●○○○○○○	○○○○○○○
4 Sinusitis or sinus problem	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○
5 Aching Muscles	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○
6 Chest Discomfort or Pain	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○
7 Dry Scratchy Throat	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○
8 Sore Throat	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○
9 Dry Cough	○○○●○○○	○○○○○○○	○○○●●●○	○○○○○○○	○○○○○○○
10 Cough With Phlegm	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○
11 Shortness of Breath	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○
12 Wheezing or Whistling	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○
13 Rash	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○
14 Fever	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○
15 Restricted Activity	○○○○○○○	○○○○○○○	○○○○●○○	○○○○○○○	○○○○○○○
16 Head Cold	○○○○○○○	○○○○○○○	○○●●●●●	○○○○○○○	○○○○○○○
17 Chest Cold	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○
18 Croup	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○
19 Asthma Attack	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○
20 Hay Fever	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○
21 Sought Medical Advice	○○○○○○○	○○○○○○○	○○○○●○○	○○○○○○○	○○○○○○○
MEDICALLY DIAGNOSED 22 Ear Infection	○○○○○○○	○○○○○○○	○○○●●●○	○○○○○○○	○○○○○○○
23 Bronchiolitis	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○
24 Bronchitis	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○
25 Influenza	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○
26 Pneumonia	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○
Out of neighborhood all 24 hours	○○○○○●○	○○○○○○○	○○○○○○○	○○○○○○○	○○○○○○○

II The following questions should be asked only of the primary respondent (preferably the mother):

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
How many hours did you use your oven?	● ZERO ① ② ③ ④ ⑤ ⑨ Do not know	● ZERO ① ② ③ ④ ⑤ ⑨ Do not know	● ZERO ① ② ③ ④ ⑤ ⑨ Do not know	● ZERO ① ② ③ ④ ⑤ ⑨ Do not know	● ZERO ① ② ③ ④ ⑤ ⑨ Do not know	● ZERO ① ② ③ ④ ⑤ ⑨ Do not know	⓪ ZERO ① ② ● ④ ⑤ ⑨ Do not know
How many hours did you use your stove top burners?	⓪ ZERO ● ② ③ ④ ⑤ ⑨ Do not know	⓪ ZERO ● ② ③ ④ ⑤ ⑨ Do not know	⓪ ZERO ● ② ③ ④ ⑤ ⑨ Do not know	⓪ ZERO ● ② ③ ④ ⑤ ⑨ Do not know	⓪ ZERO ● ② ③ ④ ⑤ ⑨ Do not know	⓪ ZERO ● ② ③ ④ ⑤ ⑨ Do not know	● ZERO ① ② ③ ④ ⑤ ⑨ Do not know
How many hours did you spend in the open air between 12 and 6 PM?	⓪ ZERO ● ② ③ ④ ⑤ ⑨ Do not know	⓪ ZERO ● ② ③ ④ ⑤ ⑨ Do not know	⓪ ZERO ● ② ③ ④ ⑤ ⑨ Do not know	⓪ ZERO ● ② ③ ④ ⑤ ⑨ Do not know	⓪ ZERO ● ② ③ ④ ⑤ ⑨ Do not know	⓪ ZERO ● ② ③ ④ ⑤ ⑨ Do not know	⓪ ZERO ① ② ● ④ ⑤ ⑨ Do not know

Interviewer	
⓪	⓪
①	①
②	●
●	③
④	④
⑤	⑤
⑥	⑥
⑦	⑦
⑧	⑧
⑨	⑨

Date Called			
Mo		Day	
⓪	●	⓪	●
●	①	●	①
	②	②	②
	③	③	③
	④		④
	⑤		⑤
	⑥		⑥
	⑦		⑦
	⑧		⑧
	⑨		⑨

RESPONDENT CODE	
●	⓪
①	①
②	●
③	③
④	④
⑤	⑤
⑥	⑥
⑦	⑦
⑧	⑧
⑨	⑨

FAMILY I D					
●	●	●	⓪	⓪	⓪
①	①	①	●	①	①
②	②	②	②	②	②
③	③	③	③	●	③
④	④	④	④	④	④
⑤	⑤	⑤	⑤	⑤	⑤
⑥	⑥	⑥	⑥	⑥	●
⑦	⑦	⑦	⑦	⑦	⑦
⑧	⑧	⑧	⑧	⑧	⑧
⑨	⑨	⑨	⑨	⑨	⑨

NCS Trans Optic F5179 54321

EXPLANATIONS FOR COLUMN 1 ITEMS
ARD STUDY SYMPTOM QUESTIONNAIRE

1. Eye irritation. Dry, itching, stinging, watery, or bloodshot eyes.

2. Headache. Mild or severe, dull or sharp pain above the eyes (frontal headache), at the back of the head (occipital headache), at the sides of the head (temporal headache), at the top of the head, or a generalized headache which would include all of these sites.

3. Runny nose. Discharge from the nose; either thin fluid or thick mucus.

4. Sinusitis or sinus trouble. Inflammation or irritation of tissue lining the sinus cavities; usually causes pain or tenderness above the eyes or over the cheek bones, stuffy nose making breathing through the nose difficult, and sometimes headache.

5. Aching muscles. Usually in ARD the aching is generalized; that is, several sets of muscles are involved: upper extremities, lower extremities, upper back usually.

6. Chest discomfort or pain. In ARD, the chest pain is usually dull or there is a feeling of pressure; some viruses cause sharp pain.

7. Dry scratchy throat. Inside of throat feels dry and "raw" or "rough."

8. Sore throat. Inside of throat is painful, usually making swallowing difficult or the pain is increased upon swallowing.

9. Dry cough. The person has a cough but no mucus is coughed up; medical people call this a non-productive cough.

10. Cough with phlegm. The person has a cough which brings up phlegm (or mucus) from the lungs; medical people call this a productive cough.

11. Shortness of breath. Difficulty in breathing usually on exertion, but in severe ARD, the patient may have difficulty in breathing even while lying quietly in bed.

12. Wheezing or whistling. The breath sounds are similar to the sound of air being forced through a small tube; the sound is audible to another person but not always to the patient, and at times is loud enough to be heard across a room.

13. Rash. Reddened or brownish areas on the skin anywhere on the body; may be raised or flat; if the lesions are raised they may be dry or filled with fluid.

14. Fever. Body temperature increased above normal for the individual; many mothers say a child has a fever when he is "hot to the touch."

15. Restricted activity. Any reduction in the normal activity of the person, such as staying home from work or school, or for persons who do not work outside the home or go to school, failure to engage in their normal activities: staying in bed or resting on a chair or couch a large part of the 24-hour period of a day.

16. Head cold. Most people will say they have a head cold when they have a stuffy or runny nose and usually a mild fever. They may also have a headache, watery eyes, and a dry or scratchy feeling in the upper part of their throats.

17. Chest cold. Most people will distinguish a head from a chest cold by the kind of cough they have; that is, the cold is called "in the chest" when the cough clearly comes from the chest. People with "chest colds" usually bring up mucus on coughing, but the cough may be dry.

18. Croup. This is usually a respiratory illness of children in which the cough is of a "barking" type; the cough is usually quite loud and harsh; there is usually also a fairly loud, harsh sound as they take air into their lungs; there may also be hoarseness.

19. Asthma attack. Difficulty in breathing due to narrowing of the bronchi; different from "shortness of breath" in that with an asthma attack, the patient has a sense of not being able to get air into his lungs. The patient with confirmed asthma, or his close relatives, never need to ask for a definition of this condition.

20. Hay fever. Inflammation of and secretions from eyes, nose, and respiratory tract due usually to plant pollen allergy; sometimes with fever and wheezing.

21. Sought medical advice. A doctor has been consulted, either by a visit to the doctor's office or by phone, regarding symptoms of illness.

23. Ear infection. A DOCTOR'S DIAGNOSIS. Made by looking into the ears with an instrument and finding inflammation, which may or may not be accompanied by a discharge; the patient usually has severe pain in the affected ear.

24. Bronchiolitis. A DOCTOR'S DIAGNOSIS. An acute respiratory illness of children in which the small airways (bronchioles) are infected and inflamed. This condition is usually accompanied by wheezing.

25. Bronchitis. A DOCTOR'S DIAGNOSIS. Can be acute or chronic; there is inflammation of and discharge of mucus from the bronchial tree.

26. Influenza. A DOCTOR'S DIAGNOSIS. An upper or lower respiratory tract illness due to one of the influenza viruses.

27. Pneumonia. A DOCTOR'S DIAGNOSIS. Inflammation of the deep lung tissue by a number of infectious and non-infectious agents.

INTERVIEWER RECORD CARD ILLUSTRATION

ID: 000136

Week	Notes	Call Day	R* Code	I* Code
PS	02 works 8-5 Mon-Fri - Visits her mother 5-6 Tue	Th	02	32
01	No ARD 01 has severe kidney stone attacks	M	02	32
02	No ARD	M	02	32
03	(01 - 1M, 4 A-W) (04 - 2,3,8,15 Tu-S)	M	02	32

*R = Respondent; I = Interviewer

Week	Notes	Call Day	R* Code	I* Code
04	(01 - 9W) (03 - 2Th, 3Tu-S, 9 W-F, 15Th, 16 Tu-S, 21 Th, 22 W-F) (04 - 3Su)	T	02	32
05	No ARD	M	02	32
06				
07				

*R = Respondent; I = Interviewer

INSTRUCTIONS FOR MAKING NOTATIONS ON INTERVIEWER'S RECORD CARD

Front of Card Deck:

Surname: Enter the family surname as it appears on the Background Questionnaire. If there is a name change after the recruitment interview, cross through the name entered and write the new name above it.

I.D.: Enter the six-digit number which appears directly under the title on the Background Questionnaire face page.

Phone: Enter the family's phone number recorded on the Background Questionnaire. If the number changes or the respondent prefers to be called at another number, cross through it and write above it the new or preferred number.

Call time: Enter the day and time determined at the pre-surveillance call that the respondent prefers to be called each week. If the respondent has indicated two times, identify the preferred order for the times listed. If there is a change later, cross through the original entry and enter the change.

Notation Cards

Column 1: "Study Week." The number of the study period for notes that will be made has been printed in this column. For example, "01" indicates the period 9/10 through 9/16/78. "PS" that is printed on the first line indicates notations for the pre-surveillance call.

Column 2: "Notes." This broad column is for notations of illnesses that occurred during the week reported or other comments the interviewer will need for conducting knowledgeable succeeding interviews. To note an illness, first write the ill member's family number, followed by a hyphen, followed by the symptom numbers and first letters of days that the symptom persisted. Enclose this set of numbers with parentheses. If no illness occurred, enter "No ARD." Notations other than the essential illness notations may be made that will be helpul at succeeding interviews.

Column 3: "Call Day." Enter the first letter of the day the call was made.

Column 4: "R Code." Enter the respondent's family member number or if a substitute was used, the member number of the substitute.

Column 5: "I Code." Enter your own interviewer code number.

NOTIFICATION

OF

ARD STUDY CHANGE

HEALTH EFFECTS RESEARCH LABORATORY
U.S. ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NORTH CAROLINA 27711

NOTIFICATION OF ARD STUDY CHANGE

1. Family Surname: ____________________ 3. ID No.: ____________
2. Respondent: ____________________ 4. Interviewer: ____________

5. Surveillance Week Number: ____________ 6. Start Date: ____________

7. Family Member Number: ____________________

8. Family Member Name: ____________________

9. Date Change Occurred: ____________________

UPDATING THE BACKGROUND QUESTIONNAIRE

10. Front Page:

☐ Head of Household Name: ____________________
☐ Address: ____________________
☐ Phone Number: ____________________
☐ Front Page Does Not Need Updating.

11. Section I:

Q.1. ____________________
Q.4. ____________________
Q.5. ____________________
Q.6. ____________________
Q.7. ____________________
☐ Section I Does Not Need Updating.

12. Section II Questions 1 Through 9:

Q.1. ____________________
Q.2. ____________________
Q.3. ____________________
Q.4. ____________________
Q.5. ____________________
Q.6. ____________________
Q.7. ____________________
Q.8. ____________________
Q.9. ____________________
☐ Section II Questions 1 Through 9 Do Not Need Updating.

13. Section II Questions 10 Through 11b:

☐ Section II Questions 10 Through 11b Do Not Need Updating.

	MOTHER (OR FEMALE GUARDIAN)	FATHER (OR MALE GUARDIAN)
10 ARE YOU EMPLOYED AT A JOB OTHER THAN A JOB YOU WORK AT WITHIN YOUR OWN HOME? IF YOU ANSWERED "YES" TO QUESTION 10, PLEASE ANSWER QUESTIONS 10a THROUGH 10h	① NO ② YES	① NO ② YES
10 a AT YOUR JOB DO YOU WORK:	INDOORS ① SHOP ② OFFICE ③ FACTORY ④ OTHER OUTDOORS ① STATIONARY ② MOBILE ③ OTHER	INDOORS ① SHOP ② OFFICE ③ FACTORY ④ OTHER OUTDOORS ① STATIONARY ② MOBILE ③ OTHER
10 b HOW DO YOU USUALLY GET TO WORK?	① AUTOMOBILE ② BUS ③ OTHER PUBLIC TRANSPORT ④ WALK ⑤ OTHER ________ (SPECIFY)	① AUTOMOBILE ② BUS ③ OTHER PUBLIC TRANSPORT ④ WALK ⑤ OTHER ________ (SPECIFY)
10 c HOW LONG DOES IT TAKE YOU TO GET TO WORK?	① LESS THAN ¼ HOUR ② ¼ TO ½ HOUR ③ ½ TO 1 HOUR ④ MORE THAN 1 HOUR	① LESS THAN ¼ HOUR ② ¼ TO ½ HOUR ③ ½ TO 1 HOUR ④ MORE THAN 1 HOUR
10 d DO YOU TRAVEL PREDOMINATELY (50% OR MORE TRIP TIME) ON ROADS WITH 6 OR MORE LANES?	① NO ② YES	① NO ② YES
10 e WHAT DAYS OF THE WEEK DO YOU USUALLY WORK?	① MONDAY THRU FRIDAY ② MONDAY THRU SATURDAY ③ OTHER ________ (SPECIFY)	① MONDAY THRU FRIDAY ② MONDAY THRU SATURDAY ③ OTHER ________ (SPECIFY)
10 f HOW MANY HOURS A DAY DO YOU USUALLY WORK?	① LESS THAN 4 HOURS ② 4 TO 6 HOURS ③ 6 TO 8 HOURS ④ MORE THAN 8 HOURS	① LESS THAN 4 HOURS ② 4 TO 6 HOURS ③ 6 TO 8 HOURS ④ MORE THAN 8 HOURS
10 g WHAT TIME OF DAY DO YOU USUALLY START WORK?	① 7 AM TO 10 AM ② 10 AM TO 1 PM ③ 1 PM TO 4 PM ④ 4 PM TO 7 PM ⑤ 7 PM TO 7 AM	① 7 AM TO 10 AM ② 10 AM TO 1 PM ③ 1 PM TO 4 PM ④ 4 PM TO 7 PM ⑤ 7 PM TO 7 AM
10 h WHAT IS THE ADDRESS OF YOUR PLACE OF WORK?	________ ________ OFFICE USE ONLY	________ ________ OFFICE USE ONLY
11 AT ANY JOB PAST OR PRESENT, ARE YOU NOW OR HAVE YOU BEEN FREQUENTLY EXPOSED TO IRRITATING SMOKE, DUST, OR FUMES? IF YOU ANSWERED "YES" TO QUESTION 11, PLEASE ANSWER QUESTIONS 11a AND 11b	① NO ② YES	① NO ② YES
11 a HOW LONG WERE YOU EXPOSED?	① LESS THAN 1 YEAR ② 1 TO 5 YEARS ③ 6 TO 10 YEARS ④ MORE THAN 10 YEARS	① LESS THAN 1 YEAR ② 1 TO 5 YEARS ③ 6 TO 10 YEARS ④ MORE THAN 10 YEARS
11 b WHAT KIND OF IRRITANT WERE YOU EXPOSED TO? FOR EXAMPLE: ASBESTOS, COAL DUST, SMELTER FUMES, RAW COTTON DUST FOUNDRY DUST	________ ________ ________ OFFICE USE ONLY ○ ○ ○	________ ________ ________ OFFICE USE ONLY ○ ○ ○

14. Section III:

☐ Section III Does Not Need Updating.

1 WRITE IN THE COLUMN BELOW THE FIRST AND MIDDLE NAME OF EACH PERSON LIVING IN THE HOUSEHOLD. WRITE LAST NAME FOR THE PERSONS WHOSE LAST NAME IS DIFFERENT FROM THAT ON THE COVER OF THE QUESTIONNAIRE.		2 MONTH AND YEAR OF BIRTH		3 SEX		4 POSITION IN HOUSEHOLD				5 WHICH OF THE FOLLOWING CHRONIC DISEASES HAVE BEEN DIAGNOSED FOR THIS PERSON?					6 DOES THIS PERSON SMOKE A PIPE OR CIGAR ON MOST DAYS?		7 HAS THIS PERSON SMOKED A TOTAL OF MORE THAN 100 CIGARETTES DURING HIS OR HER ENTIRE LIFE?			8 DOES THIS PERSON SMOKE CIGARETTES NOW?			9 IF THIS PERSON IS A CURRENT OR AN EX-CIGARETTE SMOKER, HOW MANY CIGARETTES DOES (DID) HE/SHE SMOKE PER DAY?				10 IF THIS PERSON IS A CURRENT OR AN EX-CIGARETTE SMOKER HOW OLD WAS HE/SHE WHEN HE/SHE FIRST STARTED SMOKING REGULARLY?	11 IF THIS PERSON IS AN EX-CIGARETTE SMOKER, HOW HOW OLD WAS HE/SHE WHEN HE/SHE LAST GAVE UP SMOKING REGULARLY?
(11-12)	NAME (14-34)	MONTH (35-36)	YEAR (37-40)	MALE	FEMALE	FATHER	MOTHER	CHILD	OTHER	NONE	CHRONIC HEART DISEASE	INACTIVE ASTHMA	ACTIVE ASTHMA	CHRONIC LUNG DISEASE OTHER THAN ASTHMA	NO	YES	NO	YES	DON'T KNOW	NO	YES	DON'T KNOW	10 OR LESS	ABOUT 20	ABOUT 30	40 OR MORE	AGE IN YEARS (41-42)	AGE IN YEARS (43-44)
01		☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④	☐☐	☐☐
02		☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④	☐☐	☐☐
03		☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④	☐☐	☐☐
04		☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④	☐☐	☐☐
05		☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④	☐☐	☐☐
06		☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④	☐☐	☐☐
07		☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④	☐☐	☐☐
08		☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④	☐☐	☐☐
09		☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④	☐☐	☐☐
10		☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④	☐☐	☐☐
11		☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④	☐☐	☐☐
12		☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④	☐☐	☐☐
13		☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④	☐☐	☐☐
14		☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④	☐☐	☐☐
15		☐☐	☐☐☐☐	①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④	☐☐	☐☐

INSTRUCTIONS FOR COMPLETING WEEKLY REPORT OF TELEPHONE SURVEILLANCE

Purpose of The Form

- To provide current knowledge of panel size.
- To provide tabulations for computing attrition and response rates.
- To provide a summary of reasons for withdrawal and non-response.

Page 1, Above Block I - IDENTIFYING INFORMATION

Week: The number and dates to be entered in these spaces refer to the week covered by the forms you are forwarding for data processing. For example: On Monday, September 18 and Tuesday, September 19, 1978, telephone calls are made to panel families regarding symptoms they experienced during the seven days, September 10 through 16, which is Study Week 1. The Weekly Report for Week 1 is completed on Friday, September 22, 1978. The correct entries to be made in these spaces would be Study Week No. 1 beginning September 10, 1978 and ending September 16, 1978.

Page 1, Block I - PANEL STATUS FOR WEEK OF REPORT

This section of the report provides an up-to-date tabulation of the size of and changes in the panels.

Item A: "At beginning of week"--Enter the number of panel families in each community who are actively enrolled in the study at the beginning of the week shown at the top of the report. For Week 1 the entry will be the number of panel families accepted for the study; for subsequent study weeks this entry will always be the same as the number remaining in the study at the end of the previous study week.

Item B: "Added during week"--Enter the number of new panel families for whom a record of symptoms for the week reported is submitted for data processing. For example, a panel family accepted for surveillance on September 18 will be telephoned for the first time on October 2 or 3 for symptoms that occurred between September 24 and September 30, which is Study Week 3. The family will not be counted as an addition because the family did not begin reporting until Week 3, i.e. the first symptoms reported were symptoms that occurred during Week 3 between September 24 and September 30.

No replacement will be made of families who withdraw for any reason after the first surveillance call.

Item C: "Withdrawn during week"--Enter (in either 1 or 2, whichever is the appropriate reason) the number of panel families for whom a record of symptoms for the week reported is not submitted and no reports for subsequent weeks will be obtained. In other words, families counted in this item are permanently dropped from study.

Example No. 1: On November 6, Mrs. Jones is telephoned for symptoms that occurred during Study Week 8 beginning October 29 and ending November 4. She reports their symptoms for Week 8 to the interviewer and then states she does not want to be called again. She is not counted as withdrawn from study until Weekly Report for Week 9 is prepared, because she provided symptoms for Week 8.

Example No. 2: On November 6, Mrs. Brown is telephoned for symptoms that occurred during Study Week 8 beginning October 29 and ending November 4. She refuses to report their symptoms for Week 8 and and states she does not want to be called again. She is counted as withdrawn from study in the Weekly Report for Week 8.

Example No. 3: Mrs. Smith could not be reached by phone to collect symptom histories for Weeks 4, 5, 6 and 7. Unsuccessful phone calls are made to collect a symptom history for Week 8. She is counted as withdrawn from study in the Weekly Report for Week 8.

Page 1, Block II - SUMMARY OF TELEPHONE INTERVIEWING

This section summarizes the interviewing for the week reported. The categories are mutually exclusive between A and B and within A and B, i.e. a family is counted once only in any of the eight categories under A and B. The sum of these eight categories must equal the number of families at the beginning of the week plus those added during the week. (A plus B in Block I).

Under section A, Contacts made include any family with whom a contact was made. This includes a contact made with a member of the panelist's family. Under section B, Not contacted include panelists with whom contact was not attempted or could not be made.

Item A-1: Enter the number of families from whom symptom data are obtained by telephone interview for the week reported.

Item A-2: Enter the number of families contacted (including contacts made with a family member) where the regular respondant is ill, out of the area, etc. If the temporary absence continues for several weeks and no further calls are made until she returns, this family will be counted in B-3 below for subsequent weeks of absence from the area.

Item A-3: Enter the number of panel families who were contacted and refused to report symptom data.

Item A-4: Enter the number of panel families who were contacted but who cannot be categorized in A1, A2 or A3. Footnote in the "Remarks" block the reasons symptom data was not obtained from these panelists.

Item B-1: Enter the number of families for whom telephone contact was attempted repeatedly, but without a successful contact.

Item B-2: Enter the number of panel families for whom no contact was attempted because they were known to be temporarily out of the area.

Item B-3: Enter the number of panel families where no attempt was made to contact. This category will usually be used for emergency situations, e.g., an interviewing staff depleted by illness, or a storm leaving the area without telephone service.

Item B-4: Enter the number of panelists not contacted who cannot be categorized in Items B1 through B4. Footnote in "Remarks" the reasons why these calls were not completed.

INSTRUCTIONS FOR COMPLETING ATTACHMENTS TO WEEKLY REPORT OF TELEPHONE SURVEILLANCE

During study weeks when no new families are added, no panelists are withdrawn, and all enrolled panelists are contacted, no attachments to the Weekly Report will be needed. Usually, however, one or more of the following lists must be stapled to the report:

Each form has room for 50 entries, which will be sufficient under most conditions. If not, add additional pages.

List of Additions to Study

This form is to be attached to the Weekly Report whenever one or more panelists are added to the study.

Above the double line:	Duplicate the same entries made on the Weekly Report to which the addition list is attached.
Column 1:	"Family ID No." - Enter the 6-digit code number for the family listed in column 2.
Column 2:	"Surname of families added" - Enter the surname of the family added.
Column 3:	"Size of family" - Enter the total number of individuals in the family to be included in the surveillance.

List of Withdrawals from Study

This form is to be attached to the Weekly Report whenever one or more families are dropped from the study.

Above the double line:	Duplicate the same entries made on the Weekly Report to which the withdrawal list is attached.
Column 1:	"Family ID No." - Enter the 6-digit code number for the family listed in column 2.
Column 2:	"Surname of family" - Enter the surname of the family withdrawn.
Column 3:	"Reason for withdrawal" - Enter the reason for withdrawal. The reason must be specific, "refused - too busy," not simply "refused," moving, give date, etc.

List of Families Not Contacted

This form is to be attached to the Weekly Report whenever one or more panelists cannot be contacted for symptom data.

Above the double line:	Duplicate the same entries made on the Weekly Report to which the "not contacted" list is attached.
Column 1:	"Family ID No." - Enter the 6-digit code number for the family listed in column 2.
Column 2:	"Surname of Family Not Contacted" - Enter the surname of the family who was not contacted for symptom data.
Column 3:	"Reason Not Contacted" - Use the following coding for indicating the reason not contacted:

B1 = No answer to telephone call
B2 = Temporarily withdrawn
B3 = Call not attempted
B4 = Other reasons

Note that the above coding corresponds to the items in section B of the Weekly Report. The number of persons listed should equal the total number for the corresponding item entered on the Weekly Report.

LIST OF CORRECTIONS

This form is to be attached to the Weekly Report whenever a panelist's name or code number is to be corrected. This should also be forwarded to data processing for correcting the master file, and for preprinting daily diaries. The interviewers must make the changes by hand until the preprinting program library has the change.

1978-79 ARD STUDY
WEEKLY REPORT OF TELEPHONE SURVEILLANCE

STUDY WEEK NO. ______________ WEEK BEGINNING ______________ ENDING ______________

	SUMMARY OF INTERVIEWING								
	COPLEY				UNIVERSITY CALIFORNIA RIVERSIDE				TOTAL
	W.L.A.	G.G.	GLENDORA	UPLAND	W.L.A.	G.G.	GLENDORA	UPLAND	
I . PANEL STATUS FOR WEEK OF REPORT									
A. At beginning of week									
B. Added during week									
C. Withdrawn during week									
1. Unable to contact									
2. Other reasons for withdrawal									
II. SUMMARY OF TELEPHONE INTERVIEWING									
A. Contacts made									
1. Data obtained by phone									
2. Family out of area									
3. Refused information									
4. Other									
B. Not contacted									
1. No answer to telephone									
2. Temporarily withdrawn									
3. Call not attempted									
4. Other									

REMARKS:

1978-79 ARD TELEPHONE SURVEY

LIST OF ADDITIONS TO STUDY

Page No. ______

Community ______________ Study week No. ________ beginning ________ ending ________

Family ID number	Family Surname	Size of Family	Comments

CONTINUATION LIST
OF ADDITIONS TO STUDY

1978-79 ARD TELEPHONE SURVEY

Page No. ______

Community ____________________ Study week No. __________ beginning __________ ending __________

Family ID number	Family Surname	Size of Family	Comments

1978-79 ARD TELEPHONE SURVEY

LIST OF WITHDRAWALS FROM STUDY

Page No.______

Community________________ Study week No.____________ beginning__________ ending__________

Family ID number	Family Surname	Reason for withdrawal

1978-79 ARD TELEPHONE SURVEY

CONTINUATION LIST
OF WITHDRAWALS FROM STUDY

Page No.______

Community_________________________________Study week No._______________________beginning__________________ending__________________

Family ID number	Family Surname	Reason for withdrawal

LIST OF FAMILIES NOT CONTACTED

Page No. ______

1978-79 ARD TELEPHONE SURVEY

Community ____________________ Study week No. ______________ beginning __________ ending ______________

Family ID number	Surname of Families not contacted	Reason not contacted

1978-79 ARD TELEPHONE SURVEY

CONTINUATION LIST
OF FAMILIES NOT CONTACTED

Page No.______

Community____________________ Study week No.________________ beginning__________ ending____________

Family ID number	Surname of Families not contacted	Reason not contacted

1978-79 ARD TELEPHONE SURVEY

LIST OF CORRECTIONS

Page No.______

Community____________________ Study week No. ____________ beginning__________ ending__________

Family ID number as printed on diary	Family Surname as printed on diary	Correction to be made

1978-79 ARD TELEPHONE SURVEY

CONTINUATION LIST OF CORRECTIONS

Page No.______

Community____________________ Study week No. _______________ beginning____________ ending____________

Family ID number as printed on diary	Family Surname as printed on diary	Correction to be made

PRE-SURVEILLANCE TELEPHONE CALL WORK SHEET

HEALTH EFFECTS RESEARCH LABORATORY
U.S. ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NORTH CAROLINA 27711

PRE-SURVEILLANCE TELEPHONE CALL WORKSHEET

1. Family Surname: ____________________
2. Respondent: ____________________
3. ID No.: ____________________
4. Interviewer: ____________________

5. Date and Time of Contact Attempts:

________	________
________	________
________	________
________	________

6. Unable to Contact Family:
   - ☐ Phone Disconnected
   - ☐ No Phone
   - ☐ No Answer to Phone Call
   - ☐ Other

7. Respondent Still Agrees to Participate: ☐ Yes ☐ No ____________________ (Reason)

8. Surveillance Calendar Received: ☐ Yes ☐ No ____________________ (Date Duplicate Mailed)

9. Time to Make Weekly Surveillance Calls: Mon. ______ a.m. Tues. ______ a.m. Mon. ______ p.m. Tues. ______ p.m.

Comments: ____________________

____

UPDATING THE BACKGROUND QUESTIONNAIRE

10. Front Page:
    - ☐ Head of Household Name: ____________________
    - ☐ Address: ____________________
    - ☐ Phone Number: ____________________
    - ☐ Front Page Does Not Need Updating.

11. Section I:

Q.1. ____________________

Q.4. ____________________

Q.5. ____________________

Q.6. ____________________

Q.7. ____________________

☐ Section I Does Not Need Updating.

12. Section II Questions 1 Through 9:

Q.1. ____________________

Q.2. ____________________

Q.3. ____________________

Q.4. ____________________

Q.5. ____________________

Q.6. ____________________

Q.7. ____________________

Q.8. ____________________

Q.9. ____________________

☐ Section II Questions 1 Through 9 Do Not Need Updating.

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best available copy.

13. Section II Questions 10 Through 11b:

☐ Section II Questions 10 Through 11b Do Not Need Updating.

	MOTHER (OR FEMALE GUARDIAN)	FATHER (OR MALE GUARDIAN)
10. ARE YOU EMPLOYED AT A JOB OTHER THAN A JOB YOU WORK AT WITHIN YOUR OWN HOME? IF YOU ANSWERED "YES" TO QUESTION 10, PLEASE ANSWER QUESTIONS 10a THROUGH 10h.	① NO ② YES	① NO ② YES
10 a. AT YOUR JOB DO YOU WORK:	INDOORS ① SHOP ② OFFICE ③ FACTORY ④ OTHER OUTDOORS ① STATIONARY ② MOBILE ③ OTHER	INDOORS ① SHOP ② OFFICE ③ FACTORY ④ OTHER OUTDOORS ① STATIONARY ② MOBILE ③ OTHER
10 b. HOW DO YOU USUALLY GET TO WORK?	① AUTOMOBILE ② BUS ③ OTHER PUBLIC TRANSPORT ④ WALK ⑤ OTHER ________ (SPECIFY)	① AUTOMOBILE ② BUS ③ OTHER PUBLIC TRANSPORT ④ WALK ⑤ OTHER ________ (SPECIFY)
10 c. HOW LONG DOES IT TAKE YOU TO GET TO WORK?	① LESS THAN ¼ HOUR ② ¼ TO ½ HOUR ③ ½ TO 1 HOUR ④ MORE THAN 1 HOUR	① LESS THAN ¼ HOUR ② ¼ TO ½ HOUR ③ ½ TO 1 HOUR ④ MORE THAN 1 HOUR
10 d. DO YOU TRAVEL PREDOMINATELY (50% OR MORE TRIP TIME) ON ROADS WITH 6 OR MORE LANES?	① NO ② YES	① NO ② YES
10 e. WHAT DAYS OF THE WEEK DO YOU USUALLY WORK?	① MONDAY THRU FRIDAY ② MONDAY THRU SATURDAY ③ OTHER ________ (SPECIFY)	① MONDAY THRU FRIDAY ② MONDAY THRU SATURDAY ③ OTHER ________ (SPECIFY)
10 f. HOW MANY HOURS A DAY DO YOU USUALLY WORK?	① LESS THAN 4 HOURS ② 4 TO 6 HOURS ③ 6 TO 8 HOURS ④ MORE THAN 8 HOURS	① LESS THAN 4 HOURS ② 4 TO 6 HOURS ③ 6 TO 8 HOURS ④ MORE THAN 8 HOURS
10 g. WHAT TIME OF DAY DO YOU USUALLY START WORK?	① 7 AM TO 10 AM ② 10 AM TO 1 PM ③ 1 PM TO 4 PM ④ 4 PM TO 7 PM ⑤ 7 PM TO 7 AM	① 7 AM TO 10 AM ② 10 AM TO 1 PM ③ 1 PM TO 4 PM ④ 4 PM TO 7 PM ⑤ 7 PM TO 7 AM
10 h. WHAT IS THE ADDRESS OF YOUR PLACE OF WORK?	________ ________ OFFICE USE ONLY	________ ________ OFFICE USE ONLY
11. AT ANY JOB, PAST OR PRESENT, ARE YOU NOW OR HAVE YOU BEEN FREQUENTLY EXPOSED TO IRRITATING SMOKE, DUST, OR FUMES? IF YOU ANSWERED "YES" TO QUESTION 11, PLEASE ANSWER QUESTIONS 11a AND 11b.	① NO ② YES	① NO ② YES
11 a. HOW LONG WERE YOU EXPOSED?	① LESS THAN 1 YEAR ② 1 TO 5 YEARS ③ 6 TO 10 YEARS ④ MORE THAN 10 YEARS	① LESS THAN 1 YEAR ② 1 TO 5 YEARS ③ 6 TO 10 YEARS ④ MORE THAN 10 YEARS
11 b. WHAT KIND OF IRRITANT WERE YOU EXPOSED TO? FOR EXAMPLE: ASBESTOS, COAL DUST, SMELTER FUMES, RAW COTTON DUST, FOUNDRY DUST	________ ________ ________ OFFICE USE ONLY	________ ________ ________ OFFICE USE ONLY

14. Section III:

☐ Section III Does Not Need Updating.

1 WRITE IN THE COLUMN BELOW THE FIRST AND MIDDLE NAME OF EACH PERSON LIVING IN THE HOUSEHOLD. WRITE LAST NAME FOR THE PERSONS WHOSE LAST NAME IS DIFFERENT FROM THAT ON THE COVER OF THE QUESTIONNAIRE.		2 MONTH AND YEAR OF BIRTH		3 SEX		4 POSITION IN HOUSEHOLD				5 WHICH OF THE FOLLOWING CHRONIC DISEASES HAVE BEEN DIAGNOSED FOR THIS PERSON?					6 DOES THIS PERSON SMOKE A PIPE OR CIGAR ON MOST DAYS?		7 HAS THIS PERSON SMOKED A TOTAL OF MORE THAN 100 CIGARETTES DURING HIS OR HER ENTIRE LIFE?			8 DOES THIS PERSON SMOKE CIGARETTES NOW?			9 IF THIS PERSON IS A CURRENT OR AN EX-CIGARETTE SMOKER, HOW MANY CIGARETTES DOES (DID) HE/SHE SMOKE PER DAY?				10 IF THIS PERSON IS A CURRENT OR AN EX-CIGARETTE SMOKER HOW OLD WAS HE/SHE WHEN HE/SHE FIRST STARTED SMOKING REGULARLY?	11 IF THIS PERSON IS AN EX-CIGARETTE SMOKER, HOW HOW OLD WAS HE/SHE WHEN HE/SHE LAST CAVE UP SMOKING REGULARLY?
(11 12)	NAME (14 34)	MONTH (35 36)	YEAR (37 40)	MALE	FEMALE	FATHER	MOTHER	CHILD	OTHER	NONE	CHRONIC HEART DISEASE	INACTIVE ASTHMA	ACTIVE ASTHMA	CHRONIC LUNG DISEASE OTHER THAN ASTHMA	NO	YES	NO	YES	DON'T KNOW	NO	YES	DON'T KNOW	10 OR LESS	ABOUT 20	ABOUT 30	40 OR MORE	AGE IN YEARS (41 42)	AGE IN YEARS (43 44)
01				①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④		
02				①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④		
03				①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④		
04				①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④		
05				①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④		
06				①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④		
07				①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④		
08				①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④		
09				①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④		
10				①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④		
11				①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④		
12				①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④		
13				①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④		
14				①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④		
15				①	②	①	②	③	④	①	①	①	①	①	①	②	①	②	③	①	②	③	①	②	③	④		

INSTRUCTIONS FOR CONDUCTING ARD SURVEILLANCE QUESTIONNAIRE VALIDATION

1. We will randomly sample 10 percent of each interviewer's panelists. This task has been performed by the computer and names have been supplied to you. Validate the first ten names on each of the lists if the total list contains over 90 families; use nine names if between 80 and 90 families are on the list, etc. Use replacements for those ten names taken in order from the list, only if the interviewer was unable to contact the family during Week 12 and therefore there is no information to validate, or if six attempts have been made and the Respondent has not been reached.

2. UCR's questionnaires will be validated by the prime contractor's Field Supervisor and vice versa so that no interviewer's work will be validated by her own supervisor.

3. Validation will be conducted by telephone during the next day or two following completion of all interviews conducted during the validation week, i.e., on Wednesday and Thursday following the regular Monday - Tuesday interviewing during Week 12.

4. Validation calls will be explained very carefully to the Respondent as a verification call since we are verifying the interview and not questioning the Respondent's symptoms. Validating personnel will check the appropriate interviewer call record before contacting each family in order to be aware of any unusual circumstances in the family or unique characteristics of the Respondent.

5. Validation will be performed using a xerox copy of the original questionnaire. The date of validation and notes regarding discrepancies in answers and details of the validation interview, if necessary, should be recorded directly on the xerox copy. No answer will be changed on the original questionnaires.

6. The following items will be covered during validation:

   a) Ask to speak to the person who served as Respondent on the surveillance questionnaire that week. If the Respondent is not available, ask when to call again.

   b) First validate the Respondent code and the date the original interview was completed.

c) Begin with family member 01 and move across the page in the "No Symptoms" column until you reach a family member who had symptoms during that week. Ask for all symptoms for that family member for the entire week, carefully noting the Respondent's answers to the validation interview versus the Respondent's answers during the original interview.

   1) If all symptoms agree for that family member, simply cover the remaining members by asking if each member had "No Symptoms" or symptoms. If the additional members had symptoms, it is not necessary to ask what the symptoms were.

   2) However, if the symptoms given by the Respondent for the first family member who had symptoms do not agree with the symptoms recorded for that member during the original interview, then the entire questionnaire must be validated.

d) After validation of the symptom information, in Part II of the questionnaire choose one day on which the stove and/or oven were used and validate all three items for that day only. If the Respondent's answers to all three items agree with the original interview, the Respondent should be thanked and the interview terminated. If the answers to the three items do not agree, all days should be validated for each item.

Appendix G

CORRESPONDENCE WITH PARTICIPANTS

COPLEY INTERNATIONAL CORPORATION

Economic Research • Marketing Research • Environmental Research • Management Services

January 2, 1978

Dear

We would like to inform you that your family has not been selected to participate in the continuation of the acute respiratory disease study in your community.

As you may recall, this study is being conducted by Copley International Corporation and the University of California, Riverside, for the U.S. Environmental Protection Agency. The first part of the study was the survey of families with elementary school children. One of our survey interviewers called at your home last summer and asked you questions about possible exposure to environmental pollutants in the home, on the way to work and at the job. Your answers, and those from other parents, will be very helpful to us as we evaluate the pollution exposure experienced by most school families in your community.

The second part of the study involves acute respiratory disease symptom reporting. Families, like yours, who had expressed an interest in the study, were selected at random to participate. About half of the families contacted last summer were selected.

We appreciate your interest and participation in this important study. We expect that the results of this work will support measures to improve the environment of your community and other communities in Southern California.

Sincerely yours,

R. David Flesh

R. David Flesh
Project Director

RDF:jld

7817 HERSCHEL AVENUE • P.O. BOX 1530 • LA JOLLA, CALIFORNIA 92037
TELEPHONE (714) 454-0391

COPLEY INTERNATIONAL CORPORATION

Economic Research • Marketing Research • Environmental Research • Management Services

April 18, 1979

Dear

Our thanks to you and your family for participating throughout the 26 weeks of the symptom reporting portion of the acute respiratory disease study. We know that the record keeping and telephone reporting required alot of time and effort on your part. We appreciate the effort and help you have given us to advance knowledge about acute respiratory disease in Southern California.

We are pleased to say that 87 percent of the 1,400 families who began keeping track of their symptoms for us 26 weeks ago completed the entire study. As you can imagine, a huge amount of information was provided by these families. All of this information will be carefully analyzed and compared to weather and air pollution data collected in your community in the process of looking for the factors which contribute to acute respiratory disease.

Many of the families who participated have asked to be informed about the results of the study. The results eventually will be released through the U.S. Environmental Protection Agency. However, it will take many months, even using a computer, to organize, process, and review all the information before the results can be released.

In the meantime, please accept our thanks for your help and perseverence in this research which could make Southern California an even better place to live.

Very truly yours,

R David Flesh

R. David Flesh
Project Director

RDF:jld

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